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IN THE

Supreme Court of the United States

OCTOBER TERM, 1982

AMERICAN RADIO ASSOCIATION, MMP, AFL-CIO, and RADIO OFFICERS UNION, NMEBA, AFL-CIO,
Petitioners,

v.

FEDERAL COMMUNICATIONS COMMISSION and UNITED STATES OF AMERICA,
Respondents.

APPENDIX TO PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE SECOND CIRCUIT

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January 6, 1983

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APPENDIX A

American Radio Ass'n, MMP, AFL-CIO v. *F.C.C.*, 690 F.2d 334 (2d Cir. 1982)

UNITED STATES COURT OF APPEALS
For the Second Circuit

No. 175-August Term, 1982
(Argued October 6, 1982 Decided October 8, 1982)
Docket No. 82-4045

AMERICAN RADIO ASSOCIATION, MMP, AFL-CIO AND RADIO OFFICERS UNION, NMEBA, AFL-CIO,
Petitioners,

—v.—

FEDERAL COMMUNICATIONS COMMISSION AND UNITED STATES OF AMERICA,
Respondents,

AMERICAN INSTITUTE OF MERCHANT SHIPPING,
Intervenor.

Before:

NEWMAN, KEARSE, AND PRATT,
Circuit Judges.

Per Curiam:

The American Radio Association and the Radio Officers Union petition for review of a Report and Order adopted by the Federal Communications Commission on February 11, 1982, providing a general exemption from the radiotelegraph requirements of amended section 351(a)(1)(A) of the Communications Act of 1934, 47 U.S.C. § 351(a)(1)(A) (1976), to cargo ships of over 1600 tons that engage in coastal voyages within 150 miles of the forty-eight contiguous states and that meet specific alternative communications and operational

criteria.[1] *See* P.R. Docket No. 79-336 (Feb. 11, 1982). 47 Fed. Reg. 10,220 (Mar. 10, 1982) amending 47 C.F.R. § 83.480). Petitioners claim that the Federal Communications Commission lacked statutory authority to grant such a broad exemption to section 351(a)(1)(A), that the Commission acted irrationally in concluding that the alternative communications equipment would be as effective as radiotelegraphic equipment, that the Commission failed to comply with the notification requirements of the Administrative Procedure Act, 5 U.S.C. § 553(b)(3) (1976), and that the Commission violated the National Environmental Policy Act by not filing an Environmental Impact Statement on the proposed exemption. Because we conclude that the Commission acted within its statutory authority in enacting the exemption to section 351(a)(1)(A) and proceeded in accordance with relevant procedural guidelines, we affirm the Commission's decision.

Under 47 U.S.C. § 352(b), (b)(2), "the Commission may, if it considers that the route or the conditions of the voyage or other circumstances are such as to render a radio station unreasonable or unnecessary for the purpose of this part, exempt from the provisions of this part . . . Cargo ships which in the course of their voyage do not go more than one hundred and fifty nautical miles from the nearest land." Petitioners argue that the Commission's decision exceeds this exemption authority because the telegraph requirements exempted by the Commission's decision are

---

[1]To qualify for the exemption, vessels must have: a satellite terminal providing both voice and telex communication, a single sideband radiotelephone with voice channels capable of operating on any distress and safety channel in the marine bands, a narrow-band direct-printing radiotelegraph with SITOR, the required 2182 kHz radiotelephone distress frequency watch receiver with a radiotelephone alarm signal generator, at least two VHF transceivers, provision for emergency and reserve power sources for the above-mentioned equipment, a 500 kHz auto alarm receiver and the capability of relaying the distress message received to shore via one of the systems listed above, participation in the AMVER system, and the capability to operate and maintain all of the ship's system used for distress and safety in accordance with relevant FCC rules and regulations, *See* 47 C.F.R. § 83.480 (forthcoming).

necessary for purposes of the Communications Act: namely for the maintenance of a uniform maritime distress and safety communications system and for conformity with the International Convention for the Safety of Life at Sea (SOLAS), to which the United States is a party. However, the Commission adopted the exemption to section 351(a)(1)(A)'s telegraph requirements only after it had determined that the alternative requirements "provide equivalent or better communications for safety and distress." Although the Commission may have been reluctant in the past to grant general exemptions to the requirements of section 351(a)(1)(A), it is not precluded from exercising its exemption authority when it concludes, as it has done in this case, that technological developments have made general exemptions feasible.

The Commission's action does not conflict with SOLAS. The SOLAS Conventions deal exclusively with ships on international voyages. *See, e.g.*, International Convention for SOLAS, Nov. 1, 1974, ch. I, reg. 1(a), T.I.A.S. 9700 (1974). While Congress has clearly attempted to adopt coastal communications requirements that trace the SOLAS international system, it has also emphasized the broad nature of the Commission's authority to exempt certain classes of ships from the legislated guidelines, *see* H. Rep. No. 686, 75th Cong., 1st Sess. 4-5 (1937), and refused the Commission's own request to limit such authority. *See* S. Rep. No. 1583, 83d Cong., 2d Sess. 8-9, 13 (1954). In this case, the Commission was clearly acting within that authority.

Petitioners also complain that the Commission acted irrationally or arbitrarily in adopting the section 351(a)(1)(A) exemption, particularly in concluding that the alternative communications system will be as effective as the single radiotelegraph system has been in the past. This complaint merely repeats criticisms that petitioners made to the Federal Communications Commission when the regulations were under consideration. The Commission had ample opportunity to review the petitioners' criticisms, and there was substantial evidence in the record to support the Commission's decision to reject those criticisms. In particular, the Commission was justified in relying on the fact that the Navy's elimination of

radio-telegraph equipment has had no effect on the safety of ocean-going vessels. Moreover, there is evidence in the record that the federal agency most intimately involved in maritime safety, the United States Coast Guard, agreed with the Commission that the alterntive systems "would be an adequate substitute for the mandated radiotelegraph system." Letter from M.E. Gilbert, U.S. Coast Guard, to James C. McKinney (Oct. 1, 1981). With this evidentiary support, the Commission's decision was neither arbitrary nor irrational. *See United States v. **Midwest Video Corp.***, **406 U.S. 649, 673-74 (1972)**; ***Radio Relay** Corp. v. FCC*, 409 F.2d 322, 327 (2nd Cir. 1969).

Finally, as to petitioners' procedural grounds of appeal based on the Administrative Procedure Act and the National Environmental Policy Act, we affirm the Commission's action for the reasons stated in its own Report and Order, *supra*, at ¶ 27, 40 & n.22.

Accordingly, the petition for review is denied.

APPENDIX B
Commission Orders

BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

FCC 82-75
30786

In the Matter of Amendment of Part 83 to grant a general exemption from the radiotelegraph requirements of Title III, Part II of the Communications Act to United States cargo ships of 1600 gross tons and upward navigated solely on domestic voyages along the east, west or Gulf coasts of the contiguous 48 states.	)	PR DOCKET NO. 79-336

REPORT AND ORDER
(Proceeding Terminated)

Adopted: February 11, 1982; Released: February 24, 1982

By the Commission: Commissioners Quello and Jones concurring in the result; Commissioner Fogarty dissenting.

1. A Notice of Proposed Rule Making and Notice of Inquiry in the above-captioned matter was released on January 3, 1980, and was published in the Federal Register on January 9, 1980, 45 FR 1924. The time for filing comments was extended by Private Radio Bureau Order released January 28, 1980, and was published in the Federal Register on February 1, 1980, 45 FR 7269. The time for filing comments and reply comments has expired.

2. By this action we are establishing the criteria for granting a general exemption from the requirements of Section 351(a)(1)(A) of the Communications Act, which requires cargo ships of 1600 gross tons and upward to be equipped with a radiotelegraph station. In the Notice of Proposed Rule Making, we proposed to grant a general exemption from the radiotelegraph requirements for cargo ships of 1600 gross tons and upward that are navigated on coastwise voyages, so long as the ships are equipped with radiotelephone installations operating in the medium frequency (MF) band. We have concluded however, that a radiotelephone

installation operating solely in the MF band would not provide the necessary safety communications in all cases. Instead, to qualify for a general exemption ships must meet certain additional communications requirements. In particular, ships must possess a capability for radiotelephony via satellite and be equipped with very high frequency (VHF), high frequency (HF) and medium frequency (MF) terrestrial equipment. In addition, we are requiring that ships have radioteletype capability in the satellite and HF bands. The ships shall also have a radiotelegraph auto alarm to receive any distress messages on 500 kHz and have the capability to relay the distress message to a station having a radiotelegraph capability via any of the systems on the ship. We are also requiring that the ship participate in the Automated Mutual-assistance Vessel Rescue System (AMVER). In addition, we are specifying that the ship have adequate personnel on board to operate all of the systems installed and the capability to keep all systems in satisfactory operating condition.

3. Title III, Part II of the Communications Act of 1934, as amended, provides that unless an exemption is granted, all cargo ships of 1600 gross tons and upward must be equipped with a radiotelegraph (Morse code) station operated by one or more radio officers or operators. Pursuant to the statute, an exemption can only be granted to ships navigated not more than 150 nautical miles from the nearest land, and if it is determined that the routes of the voyages or other circumstances are such as to render full application of the radiotelegraph requirements unreasonable or unnecessary. In determining whether a general exemption is warranted, we also must consider any effects on the efficiency of distress services for all ships. We have concluded that the alternate means of communications discussed above, if provided in lieu of the radiotelegraph installation, would provide equivalent or better communications for distress and safety. Therefore, we have concluded that for ships meeting the specified conditions the radiotelegraphy requirements need not be met.

BACKGROUND

4. Congress allowed the Commission the discretion to grant examptions from these radiotelegraph requirements set forth in Section 351 of the Act. Section 352(b) of the Communications Act of 1934, as amended, provides in pertinent part that:

b) Except for nuclear ships, the Commission may, if it considers that the route or the conditions of the voyage or other circumstances are such as to render a radio station unreasonable or unnecessary for the purpose of this part, exempt from the provisions of this part any ship or class of ships which falls within any of the following descriptions:

***

2) Cargo ships which in the course of their voyage do not go more than one hundred and fifty nautical miles from the nearest land;

***

5. The Commission has already granted exemptions from the radiotelegraph requirements of Title III, Part II to some cargo ships of 1600 gross tons and upward. For example, exemptions have been granted for ships whose special configuration allows them to navigate on the New York Barge Canal[1], and ships that navigate on the Great Lakes 90% of the time but make occasional coastwise voyages when the Great Lakes are closed to navigation.[2]

6. In the past, the Commission has also received requests to exempt from the radiotelegraph requirements cargo ships that engage in coastwise voyages, but do not navigate in excess of 150 miles from land. The Commission has generally denied such requests on the ground that radiotelegraph systems are essential for the ship-to-ship communication necessary to ensure that each ship may act as a potential lifeboat for others in its same class. This conclusion stemmed from a belief that the effectiveness of the pool of mutual assistance is in direct ratio to the number of ships on international, as well as on domestic, voyages that are in

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[1]On these ships, the wheelhouse may be hydraulically lowered to clear low bridges.

[2]VHF radiotelephone in the band 156.250-162 MHz is used as the safety system on the Great Lakes; MF radiotelephone systems were replaced by VHF as provided for in the most recent Great Lakes Agreement between the United States and Canada, which entered into force May 6, 1975.

the pool.[3] It is clear, however, that marine communications technology has changed dramatically in the past few years. Accordingly, our view of exemption requests must take these changes into consideration.

7. In recent years there have been substantial improvements in marine high seas radiotelephone communications as a result of the introduction of single sideband. Further, the Safety of Life at Sea Convention, London 1974 (SOLAS, 1974) now requires that all compulsorily installed radiotelephone and radiotelegraphy ships maintain a continuous watch on 2182 kHz. Radio-telephone and radiotelegraphy ships subject to SOLAS, 1974 are also required to install a VHF installation to permit a listening watch to be maintained on the bridge. While ships of 1600 gross tons or more navigated on domestic coastwise voyages are not subject to SOLAS, 1974, they are required to be fitted with VHF in order to comply with existing safety regulations, such as bridge-to-bridge and vessel traffic services system requirements.

8. In addition, the United States Coast Guard has complete VHF coverage of the coastline of the contiguous 48 states up to a minimum distance of 20 nautical miles. Radiotelegraph ships with 2182 kHz transmit and receive capability are able to participate in both the VHF and MF safety systems. This capability establishes a link between radiotelegraph and radiotelephone ships.

9. Because of these developments,we proposed in this proceeding to grant a general exemption from the radiotelegraph requirement to all cargo ships of 1600 gross tons and upward. We left open, however, whether ships qualifying for this examption would be permitted to operate up to 150 nautical miles from the nearest land as permitted in Section 352(b)(2) of the Act, and expected to reach a determination on this issue after considering the comments received. In addition, we requested specific comments on: (a) whether the Commission has the authority to grant a general exemption to ships of 1600 gross tons and upward, (b) the operational effectiveness of radiotelephony on

[3]See, for example, *Request for Reconsideration of Previous Denial of Exemption from the Radiotelegraph Provisions, Memorandum Opinion and Order, aff'd sub nom. Spentonbush Fuel Transport Service, Inc. v. FCC, 315 F. 2d 198 2nd Cir. (1963).*

2182 kHz as compared to radiotelegraphy on 500 kHz, and (c) whether a language barrier exists which would inhibit the effectiveness of radiotelephone for safety purposes.

COMMENTS OF PARTICIPANTS

10. In response to the Notice, we have received letters, formal comments and reply comments as follows:

a. Correspondence received (Appendix B)

(i) 33 Congressional inquires on behalf of constituents, of which 22 were radio officers.
(ii) 6 letters from Congressmen on their own behalf.
(iii) 15 letters from radio officers.

b. Comments were received from:

American Institute of Marine Shipping (AIMS)
American Pacific Container Lines (AMPAC)
American Radio Association and Radio Officers Union (ARA/ROU)
Atlantic Richfield Company (ARCO)
Central Committee of Telecommunications of the American Petroleum Institute (API)
United Sates Coast Guard (USCG)
Communications Workers of America (CWA)
ITT Mackay Marine (ITT)
William N. Krebs (KREBS)
Maritime Administration (MARAD)
International Organization of Masters, Mates and Pilots (IOMMP)
Matson Lines (MATSON)
Department of the Navy (USN)
William B. Prechtl (PRECHTL)
Sun Transport, Inc. (SUN)
Texaco, Inc. (TEXACO)

c. Reply comments were received from:

AIMS
ARA/ROU
ARCO
Center for Law and Social Policy on behalf of Center for

Environment Education, Coast Alliance, Defenders of Wildlife, Environmental Defense Fund, Environmental Policy Center, Friends of the Earth, Fund for Animals, National Wildlife Federation, Natural Resources Defense Council, Sierra Club, Society for Animal Protective Legislation and Wilderness Society (ENVIRONMENTAL AGENCIES)
KREBS

d. *Exparte* comments and oral presentations were made

by AIMS, EXXON and ARA/ROU to the Commission and various staff members in the Private Radio Bureau and Office of Plans and Policy. A new proposal was submitted to consider individual exemptions based on improved communications rather than a general exemption. The criteria which the Commission would use to consider an individual exemption should be placed in the rules for guidance for the applicant.

11. The summary of each comment and reply comment received is attached in Appendix D in alphabetical order. The Comments and reply comments addressed several main issues, which are set out in the following paragraphs.

12. All of the radio officers believed that the marine safety system would be severely derogated if the radiotelegraph were removed from ships engaged on coastwise voyages. The commenters noted that, because a ship radio officer's sole duty is communications, during any distress situation, his entire attention may be devoted to passing distress traffic. They also point out that radio operators, as a result of their professional training, are able to fine-tune equipment so as to receive communications under adverse conditions of noise and other sources of interference. Further, they assert, certain types of messages such as weather and MEDICO messages are more efficiently received by telegraphy by experienced operators. The radio operators believed in addition that radiotelegraph is more accurate than radiotelephone under all conditions and point out that no language barrier exists in radiotelegraphy communications. Similarly, many of the commenters did not

believe that a radiotelephone watch officer would be a satisfactory substitute for a ship's radio officer because of the asserted lack of communications professionalism of the deck officers, and because a deck officer's radio duties would be secondary to his deck duties. Other commenters stated that the radio discipline on the radiotelephone distress frequency is so poor and the volume of traffic so great, that the deck officer turns down the volume and adjusts the squelch to the point that no effective watch is maintained on the radiotelephone distress frequency.

13. Other commenters, respond, however, that during a distress it is undesirable to have complete control of communications in the hands of one person. In their view, reliance for communications on one person in a distress situation reduces a ship's effectiveness, particularly during the on-scene phase of the rescue operation. They also point out that some information contained in weather and MEDICO messages can be passed more rapidly by radiotelephone even though the information may have to be repeated to ensure accuracy. They believe in addition that no language barrier exists for radiotelephone transmissions since English is the universal language for maritime navigation and all ships have English speaking deck officers for VHF communications when entering port areas. Finally, these commenters point out that the radiotelegraph watch maintained by a radio operator is only for an 8 hour period. The remaining 16 hours are guarded by an auto alarm. Further, they assert, auto alarm systems are greatly affected by atmospherics and during periods of high atmospheric noise the auto alarm is practically useless. Hence, they challenge the alleged safety benefits of maintaining a radio officer, since his watch is effectively limited to only 8 hours out of any 24 hour period.

14. AIMS (API and EXXON associating themselves with AIMS) supported the proposal stating that, while the 500 kHz safety system has proved to be effective, other systems which include MF, HF and VHF radiotelephony and satellite communications are capable of producing an even more effective safety system. However, in defining a safety system, they believe that certain distance parameters should be established that would coincide with the radio equipment now available to cover such

defined areas. AIMS also submitted a proposal which recommended the necessary equipment for a general exemption based on varying distances from land.[4] In addition, AIMS recommends that to qualify for the exemption ships be required to participate in the AMVER system.[5]

15. ARA/ROU oppose a general exemption because they believe it has not been established that requiring radiotelegraph installations on ships on coastwise voyages is unreasonable or unnecessary. According to ARA/ROU, because the density of shipping increases as ships approach port areas, the routes of coast-wise voyages are as hazardous as, or more hazardous than, ocean voyages. They also believe that a general exemption would remove these ships as potential lifeboats to other large ships in distress and would derogate the safety system. They point out that, because environmental conditions of strong winds, heavy seas and storm conditions are usually prevalent during distress situations, ship survivors and ships rely heavily on large ships to provide assistance, since these ships are equipped with radiotelegraph, auto alarm and direction finding equipment.

16. The US Navy is also opposed to the proposal on grounds that it would remove coastal ships from participation in international agreements for guarding 500 kHz and inhibit lending aid to ships in distress. Like ARA/ROU it believes that coastal trade, out to 150 nautical miles, is more congested and dangerous than ocean traffic. Further, because the coastal belt is heavily used by international shipping, and since foreign ships do not guard 2182 kHz (the radiotelephone distress frequency), the Navy fears that there will be no distress guard between international and U.S. coastal shipping.

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[4]These recommendations are shown in Appendix C. In this docket, we are only considering the recommendation to distances up to 150 nautical miles from the nearest land with equipment operating in all of the above listed bands.

[5]AMVER - Automated Mutual-assistance Vessel Rescue System is operated by the Coast Guard and is an international system which provides important aid to the development and coordination of Search and Rescue (SAR) efforts. Merchant ships of all nations are encouraged to send voluntary sailing reports to the AMVER Center to be entered into the electronic computer which generates and maintains dead reckoning positions for the ships. Characteristics of the ships which are valuable in SAR efforts are also entered into the computer from available sources of information.

17. In the NPRM/NOI we expressly requested comments on the maximum distance from land that may be appropriate for granting a general exemption. The comments were nearly unanimous in their view that 2182 kHz was not effective up to 150 nautical miles.[6] The Coast Guard, which by statute is authorized to assume operational responsibilities relating to maritime distress, safety and protection of life and property on the high seas and coastal areas, points out that its coverage on 2182 kHz is restricted to 70 nautical miles. Thus, it states, because the Coast Guard stations cannot provide a safety system on 2182 kHz equivalent to 500 kHz, a general exemption based on the radiotelephone distress frequency 2182 kHz would not be feasible at this time.[7]

18. On June 18, 1981, an *ex parte* presentation was made by EXXON Communications Company which requested that Section 83.480 of the Commission's rules be amended to set forth specific conditions under which the Commission would grant requests for exemption to distances beyond 70 nautical miles up to the statutory limit of 150 nautical miles. In EXXON's view, to be considered for exemption for distances between 70 and 150 nautical miles, a ship should report to AMVER as recommended by that system and have at least the following communications equipment installed:

a. Satellite earth terminal providing both voice and telex with a main, emergency and reserve source of energy;
b. HF single sideband radiotelephone capable of operating on any designated safety and distress channel;

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[6]A technical analysis comparing the range of 500 kHz and 2182 kHz prepared by Mr. George W. Haydon of the National Telecommunications and Information Agency (NTIA) was submitted by ARA/ROU. In this report, Mr. Haydon determined that 500 kHz was more effective than 2182 kHz to distances up to 150 nautical miles. AIMS, in their reply comments, submitted excerpts from a technical report prepared by Mr. William A. Kissick, which was prepared for the Coast Guard. In this report, charts were submitted which showed coverage on 2182 kHz to distances beyond 150 nautical miles along the coast of the U.S. These reports are further discussed in footnote 21.

[7]The Coast Guard also states the AMVER systems reports are more easily handled on either manual or automated telegraphy than by radiotelephony. It explains that ships reporting into the AMVER system usually report in on high frequencies. Thus, because the Coast Guard capability to handle a large number of AMVER messages by radiotelephony is limited, the Coast Guard is not prepared to accept a significant number of nondistress messages by radiotelephony in either the MF of HF frequency bands.

c. Radiotelephone installation which fully complies with the rules applicable to the 2182 kHz distress watch receiver;
d. Narrow-band direct-printing telegraphy with SITOR; and
e. At least two VHF transceivers.

19. ARA/ROU made an *ex parte* presentation in response to EXXON. ARA/ROU believe that the shift from a general examption to individual exemptions based on installation of certain communications equipment, as proposed by EXXON, is deceptive. ARA/ROU believe that, because there would be no examination by the Commission of the individual circumstances affecting the safety of the particular ship, EXXON's approach would be similar to a general examption. That is, any ship having the prescribed equipment would be treated the same, even though the route and conditions of the voyages and other circumstances relating to safety might differ in the various coastal areas and among the different types of ships. ARA/ROU also object to the specifics of EXXON's proposal, arguing that:

a. There is not now nor is there any early plan for a safety system based on using satellite terminals on ships;
b. SITOR facilities are used between shore and ship stations. There is no direct ship-to-ship communications during distress. SITOR terminals automatically shut down under poor signal conditions leaving blank spaces which are unacceptable for distress communications.
c. The FGMDSS[8] will require selective calling. SITOR is not an effective substitute for selective calling. SITOR is effective only when used in a one-to-one shore communications link in the ARQ mode. When used in the FEC mode, SITOR can only detect errors which appear as blank spots in the transmission. There is no SITOR frequency dedicated to distress.
d. U.S. ships now report to AMVER, but foreign ships are not required to participate.

Finally ARA/ROU state that EXXON merely proposes a hodge-podge of equipment which would frustrate the requirement to maintain a satisfactory safety system during the transition to FGMDSS. According to ARA/ROU, the EXXON proposal also does not create a competitive market for

[8]See paragraph 36 for discussion of FGMDSS.

equipment or encourage development of improved telecommunications, but simply an inferior system that would result in the loss of lives.

20. Additional *ex parte* presentations were made by both ARA/ROU and EXXON concerning points previously raised. One of the points of major differences was the coverage and effectiveness of satellite communications for safety purposes. ARA/ROU assert that a ship terminal requires a stable platform for transmission and that satellite antennas must be accurately directed to the satellite irrespective of the motion of the ship. Accordingly, ARA/ROU conclude that satellite communications is basically only a "fair weather" mode. ARA/ROU also state that satellite coverage between 10 and 5 degrees elevation angles over the horizon is marginal in the Gulf of Mexico from Tampa, Florida to New Orleans Louisiana and west of New Orleans, Louisiana to Brownsville, Texas there is no satellite coverage. EXXON responds that the MARISAT/INMARSAT system provides reliable coverage down to 5 degrees and diminishing quality communications down to the horizon. According to EXXON, MARISAT coverage exists in all coastal waters except for that portion of the western Gulf of Mexico, and for these waters the Commission could consider alternate means of communications available for safety and distress in the MF, HF and VHF bands. EXXON also states that a new satellite will be operational in February 1982, which will provide additional coverage for the Atlantic coast and throughout the entire Gulf of Mexico,. EXXON also disagreed with ARA/ROU statements concerning the reliability of satellite communications during severe weather conditions.

21. The Coast Guard, in its comments on the *ex parte* proposals, states its view that the provision of additional equipment, along with the capability to operate and maintain all the ship's systems used for distress and safety would be an adequate substitute for the mandated radiotelegraph system. In its opinion, the following equipment should be required.

a. A satellite earth terminal providing both voice and telex.
b. A single sideband radiotelephone with voice channels capable of operating on any distress safety frequency in the maritime bands.
c. Narrow-band direct-printing radiotelegraphy with SITOR.

d. An IMCO required 2182 kHz radiotelephone distress frequency watch receiver with a radiotelephone alarm generator.
e. At least two VHF transceivers.
f. Provision for emergency and reserve power sources.
g. A 500 kHz auto alarm receiver and the capability of relaying the distress message to shore via one of the systems listed above.

The Coast Guard also recommends that ships qualifying for the general exemption be required to participate in the AMVER system, and, further, that the ships maintain and operate all of the ships' systems used for distress and safety in accordance with Sections 83.155(d) and 83.162 of the Commission's rules.

22. The opposing commenters in this proceeding also vigorously dispute the Commission's legal authority to grant the general exemption originally proposed in this docket. The American Radio Association-MMP and the Radio Officers Union-MEBA ("ARA/ROU") also assert that, even if the Commission has such authority, it may not grant such an exemption or promulgate such a rule without further notice of proposed rule making.

DISCUSSION

A. AUTHORITY TO PROMULGATE A FINAL RULE WITHOUT FURTHER NOTICE

23. In a reply, dated August 26, 1981, to an *ex parte* presentation by EXXON, the ARA/ROU, by its attorney, described what in their view are two procedural barriers to granting a general exemption by final rule without further notice of proposed rule making.

24. The first objection of ARA/ROU is that the Commission's Notice of Proposed Rule Making and Notice of Inquiry in this docket did not "wholly meet" the requirement of Section 553(b)(2) of the Administrative Procedure Act, 5 U.S.C. Section 553(b), that a notice of proposed rule making contain "reference to the legal authority under which the rule is proposed." In support of their contention, ARA/ROU point out that paragraph 10 of our notice cited only Section 4(i) and 303(r) of the Communications Act of 1934, as amended, and did not cite

Section 352(b) of the Act.[9] The short answer to this contention is that, while paragraph 10 of our notice did not cite Section 352(b), paragraph 4 of our notice made the question of our authority to grant the proposed exemption a principal question in our inquiry. For these reasons, we feel this objection is without merit.

25. The ARA/ROU also objects that the exemption and rule we are hereby adopting is beyond the scope of our notice of proposed rule making and notice of inquiry in this proceeding and consequently cannot be adopted, if at all, without further notice of proposed rule making.

26. In this connection, ARA/ROU point out that our notice did not expressly mention that such items as satellite communications, SITOR[10] and participation in AMVER might be considered as grounds for granting an exemption.[11] ARA/ROU further assert that the Administrative Procedure Act requires that notice be published in the Federal Register, and because the proposals by AIMS/EXXON (and presumably by the Coast Guard) were not published in the Federal Register, they may not be used as a basis for consideration in our decision to grant a general exemption.

27. Having duly considered these objections, we conclude that further proceedings are not required, and indeed are not warranted. We believe that the Notice of Proposed Rule Making and Notice of Inquiry adequately informed the public of the "terms and substance of the proposed rule or a description of the subjects and issues involved," as required by the Administrative Procedure Act, 5 U.S.C. 553 (b)(3). The rule ultimately adopted need not be identical to those proposed, but may take into

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[9]Sections 4(i) and 303(r) confer general rule making authority on the Commission. Section 352(b) confers the specific authority to grant exemptions from the provisions of Part II of Title III of the Act.

[10]SITOR (Simplex Telegraphy Over Radio) involves three modes:

a. ARQ - Automatic Retransmission Request.
b. FEC - Forward Error Correction (Broadcast mode).
c. SEL FEC - Selective Forward Error Correction (Broadcast mode) limited to an addressee or collective addresses.

[11]In passing, we note that our notice also did not mention 2 VHF transceivers and the 500 kHz auto alarm equipment, as proposed by the U.S. Coast Guard in this proceeding, which is incorporated in our final rule granting an exemption.

consideration factors brought out in the comments. "Surely every time the Commission decides to take account of some additional factor it is not required to start the proceedings all over again." *Logansport Broadcasting Corp.* v. *United States*, 210 F.2d 24, 28 (1954). We conclude that the rules are within the scope of the original notice and do not require further notice for several reasons. First, the requirement that the equipments and procedures mentioned be conditions for a vessel to qualify for the exemption results in a substantially lesser "scope" of exemption than the one originally proposed. Second, our original notice did not limit itself as to the considerations which might be taken into account in granting such an examption.[12] Third, all interested members of the public who participated in this proceeding were on actual notice that the Commission was considering these matters and, in fact, vigorously participated on the record in their consideration. Fourth, the record of the proceeding is replete with discussion of all possible nuances of our proposal. Accordingly, we feel that further proceedings would not result in any further facts or arguments not now on the record, and would result in repetitive discussion and waste our resources and those of the public.

B. LEGAL AUTHORITY FOR THE EXEMPTION HEREIN ADOPTED

28. The ARA/ROU argue vigorously that the Commission lacks the legal authority to adopt the examption proposed in our notice. AIMS, on the other hand, argues with equal vigor that the Commission has such authority. We conclude that we do have authority to adopt the exemption for the following reasons.

1. The Language of the Act Confers Exemption Authority

29. Without regard to the legislative history of the Act (which is discussed below), the plain text of the applicable provisions of the Act grant the Commission authority to adopt this examption. A brief discussion of those provisions is essential to illustrate this conclusion. Section 351(a)(1) of the Act imposes the

[12]In this regard, the Commission in paragraph 6 and footnote 3 thereto expressly notified the public that it was considering reversing past practice of not granting general exemptions from radio telegraphy requirements except under the most rigorous conditions. Further, paragraph 7 in the notice sets forth an illustrative, but not exclusive, list of recent developments which warranted this reconsideration of past practice. See paragraph 7 above.

radiotelegraph requirement on cargo ships of 1600 gross tons and upward. In relevant part, Section 351(a)(1) reads as follows:

"Except as provided in Section 352 hereof it shall be unlawful for any ship of the United States ... to be navigated in the open sea ... unless such ship is equiped with an efficient radio station ... as specified by subparagraphs (A) ...." Subparagraph (A) of Section 351(a)(1) reads in relevant part: " ... cargo ships of one thousand six hundred gross tons and upward shall be equipped with a **radiotelegraph station...." Section 352(b) gives the Commission** the authority to exempt ships from the requirements of Section 351. In relevant part, Section 352(b) reads: "... the Commission *may*, if it considers that the route or the conditions of the voyage *or other circumstances* are such as to render a radio station unreasonable or unnecessary for the purpose of this part, exempt from the provision of this part any ship or classes of ship within ... the following description ... cargo ships which in the course of their voyage do not go more than one hundred and fifty nautical miles from the nearest land...." (emphasis supplied).

30. Even the ARA/ROU appears to concede that, read literally, this language appears to grant the Commission authority to exempt cargo ships of 1600 gross tons and upward from the radiotelegraphy requirement.[13] Thus, for purposes of the exemption here at issue, and reading the Act literally, the Commission could exempt a "class of ships", namely cargo ships which do not go more than 150 nautical miles from land, from the requirement to carry any radio station whatever if the Commission concluded that "other circumstances" rendered a radio station "unreasonable or unnecessary".

31. It is a standard rule of statutory construction that, if the plain language of a statute authorizes an action, the courts need not look to the legislative history of it. However, because the ARA/ROU make strong arguments that such a literal construction of the statute is not warranted by other provisions of the Act read in the light of the legislative history, we will discuss the legislative history.

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[13]The ARA/ROU, however, argue that the legislative history of these provisions precludes such a literal reading. This argument is treated below.

2. The Legislative History Permits The Exemption Hereby Adopted

32. The ARA/ROU contend that, even if the Commission were to conclude (as we have) that an exemption such as the one proposed were warranted, this conclusion would constitute an administrative agency policy determination in favor of radiotelephony over radiotelegraphy in violation of the clear intent of Congress to require radiotelegraphy. If this is so, of course, legislative action by the Congress would be required to permit the exemption, in spite of our decision on the merits, because use of telegraphy would be compelled by statute.

33. Without belaboring the extensive record in this proceeding, we agree with ARA/ROU that, in the past, Congress clearly contemplated that United States cargo ships of 1600 gross tons or more on coastwise (domestic) voyages would "track" the radio communications standards, namely the requirement of the telegraphy capability and the concomitant requirement for radio officers, established by the Safety of Life at Sea Convention (SOLAS) for vessels on internatinal voyages.[14] Nor is there any doubt that, in the past, and until very recently, the Commission has expressed a view that it might not have the authority to grant a general exemption relieving the requirement.[15]

34. Having so stated, however, we nevertheless conclude that the disjunctive phrase "or other circumstances" in Section 352 permits the Commission to consider intervening historical and technical developments as factors in deciding whether or not to exempt a "class of ships" from the requirement to carry radiotelegraph equipment. As set forth in our notice in this docket and as fully explained in this report and order, communications developments have occurred which, in our opinion warrant the adoption of this exemption. The fact is that, because of recent equipment requirements, all telegraphy vessels are now mandatorily equipped with telephony equipment which renders them *de facto* members of the "mutual pool of assistance".[16] Further, the additional and clearly stringent

[14]See for example ARA/ROU "Comment" dated April 18, 1980, in this docket, at page 11.

[15]See ARA/ROU "Comment", at pages 12 - 17.

[16]See paragraph 6 of our notice of proposed rule making and notice of inquiry in this docket. See also paragraph 7 above.

capabilities we are imposing as conditions for qualifying for the exemption hereby adopted further ensure the ability of vessels of 1600 gross tons and upward to participate in both the domestic and international "safety system". Because adherence to these conditions renders the radiotelegraph requirements unreasonable and unnecessary, these developments and conditions constitute, in our view, precisely the kind of "other circumstances" that the Congress intended we could consider in exercising the very broad exemption power clearly and literally conferred by Section 352 of the Act. Certainly, nothing in the legislative history cited by ARA/ROU precludes such an interpretation.

35. Our past doubts on the scope of our exemption power are also no bar to this conclusion. See *United States v. Southwestern Cable Co.*, 392 U.S. 157, 169-170 (1968). Furthermore, while legislation to clarify whatever ambiguity might attend this question would be useful, it is not necessary to deciding it. Consequently, we have concluded that the Act empowers us to grant the exemption hereby adopted and that it is warranted by the technical, operational and practical considerations discussed elsewhere in this report and order.

C. JUSTIFICATION FOR THE EXEMPTION

36. After carefully considering the comments in this proceeding we conclude that, where ships meet specified radio equipment and other safety requirements, it is unreasonable and unnecessary to require these ships to meet the radiotelegraphy requirement set forth in Section 351 of the Act. As stated earlier,[17] this conclusion is based primarily on the significant advances that have occurred in radiotelephony in the 45 years since enactment of Section 351 and on factors relating to the changing characteristics of the maritime distress system. The present maritime distress system is based on the principle that a ship in distress alerts another ship on 500 kHz for radiotelegraphy ships and on 2182 kHz for radiotelephony ships. However, efforts to improve the present system led the IMCO Maritime Safety Committee in 1981 to adopt a proposal for a Future Global Maritime Distress and Safety System,[18] which will

[17]See para. 7, *supra.*

[18]Details of the concepts, operations and equipment requirements of the FGMDSS are contained in the Sixth Notice of Inquiry, Docket No. 20274, FCC 81-72, released March 12, 1981, (46 FR 16692; March 13, 1981).

essentially consist of the ship-to-shore distress alerting of a rescue coordinating center (RCC) and the shore-to-ship alerting by the RCC of the most suitable rescuing ship or ships. The FGMDSS concept, which has been approved by the IMCO Maritime Safety Committee with a goal of adoption by 1990, plans to make maximum use of satellite techniques including satellite Emergency Position Indicating Radio Beacons (EPIRB's) and digital selective calling. Other improved communications utilized in the system concept are narrow-band direct-printing and single sideband voice. In essence, the FGMDSS will provide integrated use of all the maritime mobile frequency bands to ensure transmission and reception of distress and safety calls at short, medium and long range.[19] Thus, it seems clear that a substitution of terrestrial radiotelephony, satellite, and narrow-band direct-printing equipment instead of manual radiotelegraphy equipment is fully consistent with modern concepts of structuring maritime distress systems, such as the planned FGMDSS system, and, in our view, will provide an effective safety communications system prior to the transition period to the FGMDSS.

37. Moreover, we note that, about 7 years ago, the US Navy itself removed the 500 kHz equipment and watch requirements on naval ships. Radiotelephony and radio teletype were substituted as a means of providing satisfactory and secure communications for command and control of the ships, and resulted in its removal of all naval ships from the radio telegraph pool of mutual assistance. Despite that, there have been no reports of accidents to other ships or derogation of the radiotelegraphy pool of mutual assistance as a direct result of the removal of this 500 kHz capability from naval ships. This record, we believe, provides additional evidence that reliance on radiotelephonic communications is unlikely to have an adverse effect on overall distress communications.[20]

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[19]In the FGMDSS, short range does not exceed 25 miles. Medium range does not exceed 100 miles. Long range exceeds 200 miles.

[20]We note that the Maritime Administration proposes to commence implementing Public Law 96-387, which when funded will pay ship operators to install communications equipment on ships found to be suitable for use by the U.S. Government in time of war or national emergency. This equipment is expected to improve communications between U.S. Navy and U.S. merchant marine ships. All U.S. cargo ships of 1000 gross tons and upwards which are likely to be involved in national security support operations are eligible to

38. In reaching this conclusion, we concede that the most efficient watch may be that which is maintained by a radio officer during the period he is maintained on the auto alarm, there may be a decrease in efficienty since the auto alarm is subject to false alarms and equipment malfunctions. Furthermore, although the deck officer has other duties in addition to maintaining the radio watch, we believe, nevertheless, that this watch is satisfactory for safety purposes. Indeed, during certain phases of distress situation, it may be especially desirable to have the communications on the bridge where the ship is being operated. As to the fears of some commenters that the deck officer may disable the receiver to reduce the noise of the bridge, we observe that the Commission can only specify the required equipment and establish operational requirements; it is ultimately the responsibility of the master to ensure that the operation is in accordance with our rules.

39. Finally, the Commission recognizes that each capability, such as SITOR and satellite communications, that we are imposing as a condition for the general exemption has its unique limitations. However, we believe that the cumulative effect of requiring the installation of all these capabilities clearly results in an adequate substitute for manual Morse telegraphy and, therefore, constitues a sufficient basis for granting a general exemption. We also do not believe that the language barrier on radiotelephony exists to a degree that it inhibits safety communications. The English language is the universal language used in the maritime service for communications on VHF in port areas. Moreover, use of the IMCO "Standard Marine Navigatinal Vocabulary" provides that standard for satisfactory verbal communications.

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receive subsidies to install National Defense Features (NDF) communications to participate in this program. In recent years a gap developed between U.S. Navy ship and U.S. merchant marine ship communications when the U.S. Navy removed their radio telegraph installations for higher capability communications systems. These NDF installations are intended to provide the necessary facilities for long-distance communications between U.S. Navy and U.S. merchant ships. The NDF equipment consists of the following:

a. One high frequency transmitter
b. Two high frequency receivers;
c. One marine digital selective calling system; and
d. One MARISAT terminal.

40. As suggested by the foregoing, we have also studied the proposals for additional equipment and the Coast Guard's comments on the efficiency of this enhanced communications for safety purposes.[21] We conclude that the recommendation of the Coast Guard, which would require the provision of additional equipment, participation in the AMVER system, and the capability to operate and maintain all of the installed communications equipment in accordance with Sections 83.159 and 83.162 of the Commission's rules respectively satisfies the requirement for a general exemption.[22] In sum, in order to qualify

[21]Technical analysis which compared the communications range of 500 kHz and 2182 kHz prepared by Mr. George W. Haydon of the National Telecommunications and Information Agency (NTIA), was submitted by ARA/ROU. AIMS, in their reply comments, submitted excerpts from a technical report prepared by Mr. William A. Kissick of NTIA, which was prepared for the Coast Guard. Certain assumptions were made in each of these reports which prevent direct comparison such as different values for the RF signal-to-noise density ratio, different emissions and different power outputs. However, when adjustments were made for comparison of the minimum coverage distances, both reports were found to be substantially the same. The Kissick report is misleading because it is a computer analysis of coverage under given conditions. The actual Coast Guard coverage in 2182 kHz is 70 nautical miles and is limited by the receivers installed. There is no program to change receivers to enhance the coverage to 150 nautical miles. In light of these limitations several commenters stated that it was necessary to supplement 2182 kHz with HF frequencies to assure communications when 2182 kHz is ineffective due to either the attenuation of ground waves or high noise conditions. It was suggested that 4125 and 6215.5 kHz be designated for distress and safety purposes in the Radio Regulations. In the United States, however 4125 kHz is available to limited coast/ship stations. Accordingly, before making this frequency available for distress and safety purposes, it would be necessary to obtain a replacement frequency for these limited coast/ship stations. In addition, the United States is now preparing its proposals for the 1983 World Administrative Radio Conference for Mobile Telecommunications, which will be held in Geneva beginning February 23, 1983, and one of the items on the agenda is a proposal to use 4125 kHz and 6215.5 kHz to supplement the carrier frequency 2182 kHz for distress and safety purposes. We believe it would be inadvisable to assign any additional high frequencies for distress and safety communications prior to the Conference.

[22]In light of these conclusions, and the fact that exempt vessels so fitted will function efficiently in a safety system, we further conclude that there will be no impact on safety and consequently no impact on the environment. Consequently, the preparation of an environmental impact statement, as suggested by one commenter, is not necessary before adopting the general exemption. This rule making does not involve any of the classes of "major action" requiring preparation of an environmental impact statement. See 47 CFR §1.1305.

for the general exemption we believe that ships must be equipped with radiotelephone equiment operating in the MF, HF, VHF and satellite bands. The HF and satellite installations must also be capable of TELEX operation with SITOR. Moreover, ships must be equipped with the radiotelephone distress frequency watch receiver with a radiotelephone alarm.

41. In view of the foregoing, we conclude that Section 83.480 of the rules can be amended to grant the general exeption for ships meeting all of the specified criteria.

42. Regarding questions on matters covered in this document contact Nicholas G. Ragnato (202) 632-7175.

ACTION

43. Accordingly, IT IS ORDERED, that under the authority contained in Sections 4(i), (303)(r) and 352(b) of the Communications Act of 1934, as amended, Part 83 of the Commission's rules be amended as set forth in the attached Appendix A effective April 2, 1982.

44. IT IS FURTHER ORDERED, That this proceeding is TERMINATED.

FEDERAL COMMUNICATIONS
COMMISSION

William J. Tricarico
Secretary

Attachment: Appendixes

APPENDIX A

Part 83 of Chapter I of Title 47 of the Code of Federal Regulations is amended as follows:

Part 83 - Stations on Shipboard in the Maritime Services.

Section 83.480 is revised by redesignating the title of the section redesignating existing paragraph (c) as (d) and adding new paragraph (c) to read as follows:

§83.480 General and individual ship exemptions.

* * * * *

(c) Exemption from the radiotelegraph requirements of Title III, Part II of the Communications Act of 1934, as amended, is granted to cargo ships of 1600 gross tons and upward nagivated on domestic voyages along the coasts of the contiguous 48 states if the following criteria are met:

(1) The routes of the voyage are never more than 150 nautical miles from the nearest land.

(2) The ship shall have a satellite terminal providing both voice and telex.

(3) The ship shall have a single sideband radiotelephone with voice channels capable of operating on any distress and safety channel in the marine bands.

(4) The ship shall have a narrow-band direct-printing radiotelegraph with SITOR.

(5) The ship shall have the required 2182 kHz radiotelephone distress frequency watch receiver with a radiotelephone alarm signal generator.

(6) The ship shall have at least two VHF transceivers.

(7) The above equipment shall have provisions for emergency and reserve power sources.

(8) The ship shall have a 500 kHz auto alarm receiver and the capability of relaying the distress messages received to shore via one of the systems listed above.

(9) The ship shall participate in the AMVER system.

(10) The ship shall have the capability to operate and maintain all the ships systems used for distress and safety in accordance with Section 83.155(d) and 83.162 of the Commission's Rules respectively.

(d) * * *

Before the

Federal Communications Commission
Washington, D.C. 20554

In The Matter Of Amendment of Part 83 to Grant A General Exemption from the Radiotelegraph Requirements of Title III, Part II, of the Communications Act to United States Cargo Ships of 1,600 Gross tons And Upward, Navigated Solely on Domestic Voyages Along The East, West, or Gulf Coasts Of the Contiguous 48 States.	)	PR Docket No. 79-336

ORDER

Adopted: April 12, 1982 ; Released: April 14, 1982

By the Commission: Commissioner Fogarty dissenting.

1. By Report and Order released February 24, 1982, in PR Docket No. 79-336 (FCC 82-75) 47 FR 10220, the Commission adopted a general exemption from the requirement to carry manually operated Morse code radiotelegraph equipment for cargo vessels fo 1600 gross tons and upwards which meet specified equipment and procedureal conditions. A Motion for Stay of the effective date of this Report and Order, pending judicial review,[1] was filed on March 22, 1982, by the American Radio Association - MMP and the Radio Officers Union NMEBA ("ARA/ROU"). The ARA/ROU Motion for Stay was opposed on March 29, 1982, by the American Institute of Merchant Shipping ("AIMS").

[1]The ARA/ROU filed a petition for review in the United States Court of Appeals for the Second Circuit on March 11, 1982 *(American Radio Association, MMP, AFL-CIO and Radio Officers Union, NMEBA, AFL-CIO v. Federal Communications Commission and the United States of America,* Case No. 82-4045).

2. The ARA/ROU attempt to meet the test of *Virginia Petroleum Jobbers Ass'n. v. FPC.* 259 F. 2d 921 (D.C. Cir. 1958) for the grant of a stay. That test requires a petitioner for stay to show that petitioner is likely to prevail on the merits of its appeal; that failure to grant a stay will result in irreparable injury; that the grant of a stay will not substantially harm other interested parties; and that the grant of a stay would be in the public interest.

3. We conclude that the ARA/ROU have failed to make a satisfactory showing with respect to all of these considerations and consequently will deny the request to all of these considerations and consequently will deny the request for stay. In doing so, however, we wish to specifically address several arguments raised by the petitioner.

4. As to the ARA/ROU argument that it will succeed on the merits on appeal, we feel, as we stated in our Report and Order, that we have clear statutory authority to grant the general exeption and that the facts of record reasonably support such a grant. Secondly, the ARA/ROU contenton of irreparable injury appears to rest on putative harm to others and not to the ARA/ROU or their members. To the degree that such other putative harm as may result to others is concerned, it appears to be speculative.

5. ARA/ROU contend that an environmental impact statement is required by operation of the Environmental Policy Act of 1969, 42 U.S.C. §4332(c) and of Section 1.1303 of our rules. The short answer to this contention is that the action taken in PR Docket No. 79-336 is not a major action within the meaning of our rules nor of the Environmental Policy Act. Furthermore, the ARA/ROU did not raise this question in their comments addressed to our Notice of Proposed Rule Making. This question was raised in the comments of the Center for Law and Social Policy on behalf of several environmental organizations. The latter organization has not appealed our action.

6. Lastly, public interest considerations do not warrant the grant of a stay. As set forth in our Report and Order, the U.S. Coast Guard supports the grant of the general exemption. The record reveals that historical and technological developments are displacing the need for manual Morse telegraphy where, as in the

case of the general exemption granted in this proceeding, modern systems and methodologies render it unreasonable and unnecessary for purposes of Part II of Title III of the Act.

7. Accordingly, IT IS HEREBY ORDERED, That the Petition For Stay filed by ARA/ROU in PR Docket No. 79-336 IS DENIED. Further, we do not believe oral argument on the request for stay is warranted. Accordingly, the request for oral argument IS DENIED.

FEDERAL COMMUNICATIONS COMMISSION

William J. Tricarico
Secretary

APPENDIX C
COURT JUDGMENT

U.S. Court of Appeals
For The
Second Circuit

At a stated Terms of the United States Court of Appeals for the Second Circuit, held at the United States Courthouse in the City of New York, on the eight day of October one thouseand nine hundred and eighty-two

Present:

HON. JON O. NEWMAN
HON. AMALYA L. KEARSE
HON. GEORGE C. PRATT

Circuit Judges,

AMERICAN RADIO ASSOCIATION, MMP, AFL-CIO, and RADIO OFFICERS UNION, NMEMBA, AFL-CIO
Petitioners,

v.

FEDERAL COMMUNICATIONS COMMISSION and UNITED STATES OF AMERICA,
Respondents,

AMERICAN INSTITUTE OF MERCHANT SHIPPING,
Intervenor.

Petition for review of a Report and Order of the Federal Communication Commission,

This cause came to be heard on the record of the Federal Communications Commission and was argued by counsel,

Upon consideration thereof, it is hereby ordered, adjudged, and decreed that the petition for review be and it hereby is denied in accordance with the opinion of this court with costs to be taxed against the petitioner.

A. Daniel Fusaro, Clerk

by: Arthur Heller,
Deputy Clerk

Entered: October 8, 1982
Issued on a mandate: November 22 1982

APPENDIX D
STATUTES AND REGULATIONS

Title III, Part II, of the Communications Act of 1934, 47 U.S.C. §§351-362

47 U.S.C.§351

SHIP RADIO STATIONS OPERATION 103

(a) Except as provided in section 352 hereof it shall be unlawful—

(1) For any ship of the United States, other than a cargo ship of less than three hundred gross tons, to be navigated in the open sea outside of a harbor or port, or for any ship of the United States or any foreign country, other than a cargo ship of less than three hundred gross tons, to leave or attempt to leavy any harbor or port of the United States for a voyage in the open sea, unless such ship is equipped with an efficient radio station in operating condition, as specified by subparagraphs (A) and (B) of this paragraph, in charge of and operated by one or more radio officers or operators adequately installed and protected os as to insure proper operation, and so as not to endanger the ship and radio station as hereinafter provided, and, in the case of a ship of the United States, unless there is on board a valid station license issued in accordance with this Act.

(A) Passenger ships irrespective of size and cargo ships of one thousand six hundred gross tons and upward shall be equipped with a radiotelegraph station complying with the provisions of this part;

(B) Cargo ships of three hundred gross tons and upward but less than one thousand six hundred gross tons, unless equipped with a radiotelegraph station complying with the provisions of this part, shall the provisions of this part.

(2) For any ship of the United States of one thousand six hundred gross tons and upward to be nagivated in the open sea outside of the harbor or port, or for any ship of the United States or any foreign country to leave or attempt to leave any harbor or port of the United States for a voyage in the open sea, unless such ship is equipped with efficient radio direction finding apparatus approved by the Commission, properly adjusted in operating conditions as hereinafter provided.

(b) A ship which is not subject to the provisions of this part at the time of its departure on a voyage shall not become subject to such provisions on account of any deviation from its intended voyage due to stress of weather or any other cause over which neither the master, the owner, nor the charterer (if any) has control.

47 U.S.C. §352

(a) The Provision of this part shall not apply to—

(1) A ship or war;

(2) A ship of the United States belonging to and operated by the Government, except a ship of the United States Maritime Commission, the Inland and Coastwise Waterways Service, or the Panama Canal Company;[106]

(3)[107]A foreign ship belonging to a country which is a party to any Safety Convention in force between the United States and that country which ship carries a valid certificate exempting said ship from the radio provisions of that Convention, or which ship conforms to the radio requirements of such Convention or Regulations and has on board a valid certificate to that effect, or which ship is not subject to the radio provisions of any such Convention;

(4) Yachts of less than six hundred gross tons not subject to the radio provisions of the Safety Convention;

(5) Vessels in tow;

(6) [108]A ship navigating solely on any bays, sounds, rivers, or protected waters within the jurisdiction of the United States, or to a ship leaving or attempting to leave any harbor or port of the United States for a voyage solely on any bays, sounds, rivers, or protected waters within the jurisdiction of the United States,

(7) [109]A ship navigating solely on the Great Lakes of North America and the River Saint Lawrence as far east as a straight line drawn from Cap des Rosiers to West Point, Anticosti Island, and, on the north side of Anticosti Island, the sixty-third meridian, or to a ship leaving or attemting to leave any harbor or port of the United States for a voyage solely on such waters and within such area;

(8) [109]A ship which is navigated during the course of a voyage both on the Great Lakes of North America and in the open sea, during the period while such ship is being navigated within the Great Lakes of North America and their connecting an tributary waters as far east as the lower exit of the Saint Lambert locks at Montreal in the Province of Quebec, Canada,

(b) [110]Except for nuclear ships, the Commission may, if it considers that the route or the conditions of the voyage or other circumstances are such as to render a radio station unreasonable or unnecessary for the purpose of this part, exempt from the provisions of this part any ship or class of ships which falls within any of the following descriptions:

(1) Passengers ships which in the course of their voyage do not go more than twenty nautical miles from the nearest land or, alternatively, do not go more than two hundred nautical miles between two consecutive ports;

(2) Cargo ships which in the cours of their voyage do not go more than one hundred and fifty nautical miles from the nearest land;

(3) Passenger vessels of less than one hundred gross tons not subject to the radio provisions of the Safety Convention;

(4) Sailing ships.

(c) If, because of unforeseeable failure of equipment, a ship is unable to comply with the equipment requirements of this part without undue delay of the ship, the mileage limitations set forth in paragraphs (1) and (2) of subsection (b) shall not apply; *Provided,* That exemption of the ship is found to be reasonalbe or necessary in accordance with subsection (b) to permit the ship to proceed to a port where the equipment deficiency may be remedied.

(d) [111]Except for nuclear ships, and except for ships of five thousand gross tons and upward which are subject to the Safety Convention, the Commission may exempt from the requirements, for radio direction finding apparatus, of this part and of the Safety Convention, any ship which falls within the descriptions set forth in paragraphs (1), (2), (3), and (4) of

subsection (b) of this section, if it considers that the route or conditio of the voyage or other circumstances are such as to render such apparatus unreasonable or unnecessary.

RADIO OFFICERS, WATCHES, AUTO ALARM RADIOTELEGRAPH EQUIPPED SHIPS[118]

(a) Each cargo ship which in accordance with this part is equipped with a radiotelegraph station and which is not equipped with a radiotelegraph auto alarm, and each passenger ship required by this part to be equipped with a radiotelegraph station, shall, for safety purposes, carry at least two radio officers.

(b) A cargo ship which in accordance with this part is equipped with a radiotelegraph station, which is equipped with a radiotelegraph auto alarm, shall, for safety purposes, carry at least one radio officer who shall have had a least six months' previous service in the aggregate as a radio officer in a station on board a ship or ships of the United States.

(c) Each ship of the United States which in accordance with this part is equipped with a radiotelegraph station shall, while being navigated in the open sea outside of a harbor or port, keep a continuous watch by means of radio officers whenever the station is not being used for authorized traffic: *Provided,* That, in lieu thereof, on a cargo ship equipped with a radiotelegraph auto alarm in proper operating condition, a watch of at least eight hours per day, in the aggregate, shall be maintained by means of a radio officer.

(d) The Commission shall, when it finds it necessary for safety purposes, have authority to prescribe the particular hours of watch on a ship of the United States which in accordance with this part is equipped with a radiotelegraph station.

(e) On all ships of United States equipped with a radiotelegraph auto alarm, said apparatus shall be in operation at all times while the ship is being navigated in the open sea outside of a harbor or port when the radio officer is not on watch.

47 U.S.C. §353(a)

OPERATORS, WATCHES—RADIO TELEPHONE EQUIPPED SHIPS

(a) Each cargo ship which in accordance with this part is equipped with a radiotelephone station shall, for safety purposes, carry at least one operator who may be the master, an officer, or a member of the crew.

(b) Each cargo ship of the United States which in accordance with this part is equipped with a radiotelephone station shall, while being navigated in the open sea outside of a harbor or port, maintain continuous watch whenever the station is not being used for authorized traffic.

47 U.S.C. §354

TECHNICAL REQUIREMENTS—RADIOTELEGRAPH EQUIPPED SHIPS

The radiotelegraph station and the radio direction finding apparatus required by section 351 of this part shall comply with the following requirements:

(a) The radiotelegraph station shall include a main installation and a reserve installation, electrically separate and electrically independent of each other: *Provided,* That, in installations on cargo ships of three hundred gross tons and upward but less than one thousand six hundred gross tons, and in installations on cargo ships of one thousand six hundred gross tons and upward installed prior to November 19, 1952, if the main transmitter complies with all the requirements for the reserve transmitter, the latter may be omitted.[116]

(b) The radiotelegraph station shall be so located that no harmful interference from extraneous mechanical or other noise will be caused to the proper reception of radio signals, and shall be placed in the upper part of the ship in a posotion of the greatest possible safety and as high as practicable above the deepest load waterline. The location of the radiotelegraph operating room or rooms shall be approved by the Commandant of the Coast Guard. The radiotelegraph installation shall be installed in such a position that it will be protected against the harmful effects of water or extremes of temperature, and shall be readily accessible both for immediate use in case of distress and for repair.

(c) The radiotelegraph operating room shall be of sufficient size and of adequate ventilation to enable the main and reserve radiotelegraph installations to be operated efficiently, and shall not be used for any purpose which will interfere with the operation of the radiotelegraph station. The sleeping accommodation of at least one radio officer shall be situated as near as practicable to the radiotelegraph operating room. In ships the keel of which are laid on or after May 26, 1965, this sleeping accommodation shall not be within the radiotelegraph operating room.

(d) The main and reserve installations shall be capable of transmitting and receiving on the frequencies, and using the classes of emission, designated by the Commission pursuant to law for the purposes of distress and safety of navigation.

(e) The main and reserve installations shall, when connected to the main antenna, have a minimum normal range of two hundred nautical miles and one hundred nautical miles, respectively; that is, they must be capable of transmitting and receiving clearly perceptible signals from ship to ship by day and under normal conditions and circumstances over the specified ranges.

(f) Sufficient electrical energy shall be available at all times to operate the main installation over the normal range required by subsection (e) of this section as well as for the purpose of charging any batteries forming part of the radiotelegraph station.

(g) The reserve installation shall include a source of electrical energy independent of the propelling power of the ship and of any other electrical system and shall be capable of being put into operation rapidly and of working for at least six continuous hours. The reserve source of energy and its switchboard shall be as high as practicable in the ship and readily accessible to the radio officer.

(h) There shall be provided between the bridge of the ship and the radiotelegraph operating room, and between the bridge and the location of the radio direction finding apparatus, when such apparatus is not located on the bridge, an efficient two-way system for calling and voice communication which shall be independent of any other communication system in the ship.

(i) The radio direction finding apparatus shall be efficient and capable of receiving signals with the minimum of receiver noise and of taking bearings from which the true bearing and direction

may be determined. It shall be capable of receiving signals on the radiotelegraph frequencies assigned by the radio regulations annexed to the International Telecommunication Convention in force for the purpose of distress, direction finding, and maritime radio beacons, and, in installations made after May 26, 1965, such other frequencies as the Commission may for safety purposes designate.

47 U.S.C. §354(a)

TECHNICAL REQUIREMENTS--RADIOTELEPHONE EQUIPPED SHIPS

Cargo ships of three hundred gross tons and upward but less than one thousand six hundred gross tons may, in lieu of the radiotelegraph station prescribed by section 355, be equipped with a radiotelephone station complying with the following requirements:

(a) The radiotelephone station shall be in the upper part of the ship, so located that it is sheltered to the greatest possible extent from noise which might impair the correct recepton of messages and signals, and, unless such station is situated on the bridge, there shall be efficient communication with the bridge.

(b) The radiotelephone installation shall be capable of transmitting and receiving on the frequencies, and using the classes of emission, designated by the Commission pursuant to law for the purposes of distress and safety of navigation.

(c) The radiotelephone installation shall have a minimum normal range of one hundred and fifty nautical miles; that is, it shall be capable of transmitting and receiving clearly perceptible signals fro ship to ship by day and under normal conditions and circumstances over this range.

(d) There shall be available at all times a main source of electrical energy sufficient to operate the installation over the normal range required by subsection (c) of this section. If batteries are provided they shall have sufficient capacity to operate the transmitter and receiver for at least six continuous hours under normal working conditions. In installations made on or after November 19, 1952, a reserve source of electrical energy shall be provided in the upper part of the ship unless the main source of energy is so situated.

47 U.S.C. §355

SURVIVAL CRAFT

Every ship required to be provided with survival craft radio by treaty to which the United States is a party, by statute, or by regulation made in conformity with a treaty, convention, or statute, shall be fitted with efficient radio equipment appropriate to such requirement under such rules and regulations as the Commission may find necessary for safety of life. For purposes of this section, "radio equipment" shall include portable as well asd nonportable apparatus.

47 U.S.C. §356

APPROVAL OF INSTALLATIONS

(a) Insofar as is necessary to carry out the purposes and requirements of this part, the Commission shall have authority, for any ship subject to this part—

(1) To approve the details as to the location and manner of installations of the equipment required by this part of equipment necessitated by reason of the purposes and requirements of this part.

(2) To approve installations, apparatus, and spare parts necessary to comply with the purposes and requirements of this part.

(3) To presceibe such additional equipment as may be determined to be necessary to supplement that specified herein, for the proper functioning of the radio installation installed in accordance with this part or for the proper conduct of radio communication in time of emergency or distress.

47 U.S.C. §357

TRANSMISSION OF INFORMATION

(a) The master of every ship of the United States, equipped with radio transmitting apparatus, which meets with dangerous ice, a dangerous derelict, a tropical storm, or any other *direct* danger to navigation, or encounters subfreezing air temperatures associated with gale force winds causing severe ice accretion on superstructures, or winds of force 10 or above on the Beaufort scale for which no storm warning has been received, shall cause to be transmitted all pertinent information relating thereto to ships

in the vicinity and to the appropriate authorities on land, in accordance with rules and regulations issued by the Commission. When they consider it necessary, such authorities of the United States shall promptly bring the information received by them to the knowledge of those concerned, including interested foreign authorities.[121]

(b) No charge shall be made by any ship or station in the mobile service of the United States for the transmission, receipt, or relay of the information designated in subsection (a) originating on a ship of the United States or of a foreign country.

(c) The transmission by any ship of the United States, made in compliance with subsection (a), to any station which imposes a charge for the reception, relay, or forwarding of the required information, shall be free of cost to the ship concerned and any communication charges incurred by the ship for transmission, relay, or forwarding of the information may be certified to the Commission for reimbursement out of moneys appropriated to the Commission for that purpose.

(d) No charge shall be made by any ship or station in the mobile service of the United States for the transmission of distress messages and replies thereto in connection with situations involving the safety of life and property at sea.

(e) Notwithstanding any other provision of law, any station or carrier may render free service in connection with situations involving the safety of life and property at sea.

(e) Notwithstanding any other provision of law, any station or carrier may render free service in connection with situations involving the safety of life and property, including hydrographic reports, weather reports, reports regarding aids to navigation and medical assistance to injured or sick persons on ships and aircraft at sea. All free service permited by this subsection shall be subject to such rules and regulations as the Commission may prescribe, which rules may limit such free service to the extent which the Commission finds desirable in the public interest.

47 U.S.C. §358

AUTHORITY OF MASTER

The radio installation, the operators, the regulation of their watches, the transmission and receipt of messages, and the radio service of the ship except as they may be regulated by law or

international agreement, or by rules and regulations made in pursuance thereof, shall in the case of a ship of the United States be under the supreme control of the master.

47 U.S.C. §359

CERTIFICATES

(a) Each vessel of the United States to which the Safety Convention applies shall comply with the radio and communication provisions of said Convention at all times while the vessel is in use, in addition to all other requirements of law, and shall have on board an appropriate certificate as prescribed by the Safety Convention.

(b) Appropriate certificates concerning the radio particulars provided for in said Convention shall be issued upon proper request to any vessel which is subject to the radio provisions of the Safety Convention and is found by the Commission to comply therewith. Cargo ship safety radio telegraphy certificates, cargo ship safety radiotelephony certificates, and exemption certificates with respect to radio particulars shall be issued by the Commission.[124] Other certificates concerning the radio particulars provided for in the said Convention shall be issued by the Commandant of the Coast Guard or whatever other agency is authorized by law to do so upon request of the Commission made after proper inspection of determination of the facts. If the holder of a certificate violates the radio provisions of the Safety Convention or the provisions of the Act, or the rules, regulations, or conditions prescribed by the Commission, and if the effective administration of hte Safety Convention or of this part so requires, the Commission, after hearing in accordance with law, is authorized to modify or cancel a certificate which it has issued, or to request hte modification or cancellation or a certificate which has been issued by another agency upon the Commission's request. Upon receipt of such request for modification or cancellation, the Commandant of the Coast Guard, or whatever agency is authorized by law to do so, shall modify or cancel the certificate in accorance therewith.

47 U.S.C. §360

INSPECTION

(a) In addition to any other provision required to be included in a radio station license, the station license of each ship of the United States subject to this title shall include particulars with reference to the items specifically required by this title.

(b) Every ship of the United States, subject to this part, shall have the equipment and apparatus prescribed therein, inspected at least once each year by the Commission. If, after such inspection, the Commission is satisfied that all relevant provisions of this Act and the station license have been complied with the fact shall be certified to on the station license by the Commission. The Commission shall make such additional inspections at frequent intervals as may be necessary to insure compliance with the requirements of this Act. The Commission may, upon a finding that the public interest would be served thereby, waive of first arrival at a United States port from a foreign port, for the sole purpose of enabling the vessel to proceed coastwise to another port in the United States where an inspection can be held: *Provided,* That such waiver may not exceed a period of thirty days.[126]

47 U.S.C. §361

CONTROL BY COMMISSION

Nothing in this title shall be interpreted as lessening in any degree the control of the Commission over all matters connected with the radio equipment and its operation on shipboard and its decision and determination in regard to teh radio requirements, installations, or exemptions from prescribed radio requirements shall be final, subject only to review in accordance with law.

47 U.S.C. §362

FORFEITURES

The following forfeitures shall apply to this part, in addition to the penalties and forfeitures provided by title V of this Act:

(a) Any ship that leaves or attempts to leave any harbor or port of the United States in violation of the provisions of this part, or the rules and regulations of the Commission made in pursuance thereof, or any ship of the United States that is navigated outside

of any harbor or port in violation of any of the provisions of this part, or the rules and regulations of the Commission made in pursuance thereof, shall forfeit to the United States the sum of $500, recoverable by way of suit or libel. Each such departure or attempted departure, and in the case of a ship of the United States each day during which such navigation occurs shall constitute a separate offense.

(b) Every willful failure on the part of the master of a ship of the United States to enforce or to comply with the provisions of this Act or the rules and regulations of the Commission as to equipment, operators, watches, or radio service shall cause him to forfeit to the United States the sum of $100.

RULES AND REGULATIONS
47 C.F.R. Part 83

SUBPART R—RADIOTELEGRAPH AND SHIP RADAR STATIONS PROVIDED FOR COMPLIANCE WITH PART II OF TITLE III OF THE COMMUNICATIONS ACT OR THE RADIO PROVISIONS OF THE SAFETY CONVENTION

§83.441 Inspection of station.

(a) Every ship of the United States subject to part II of title III of the Communications Act and/or the radio provisions of the Safety Convention shall have the equipment and apparatus prescribed therein inspected at least once every 12 months. The issuance of an appropriate certificate (see section 361 of the Communications Act) in behalf of any vessel of the United States concerning the radio particulars provided for in the safety Convention is subject to a finding by the Commission that such vessel complies with the applicable radio provisions of that Convention. The issuance date of Cargo Ship Safety Radiotelegraphy Certificates and Cargo Ship Safety Radiotelephony Certificates issued by the Commission shall be the date the station is found to be in compliance or not later than one business day folowing such incompliance date.

(b) Every ship of the United States holding a Safety Convention certificate is subject when in a port of a foreign country which is a party to the Safety Convention to control by officers duly authorized by the government of that country, insofar as that control is directed towards verifying that there is on board a valid Safety Convention certificate and, if necessary, that the condition of the ship or of its equipment corresponds substantially with the particulars of that certificate.

(c) The privileges of the Safety Convention may not be claimed in favor of any ship unless it holds appropriate valid Convention certificates. In the event of control giving rise to intervention of any kind in a foreign port, the officer carrying out the control is required to notify the United States Consul in writing forthwith of all the circumstances in which intervention was deemed to be necessary.

(d) Certificates issued under and in accordance with the Safety Convention shall be posted in a prominent and accessible place in the ship.

§ 83.442 Radio station.

The radio station required to be provided on a ship by reason of the provisions of part II of title III of the Communications Act, or on a U.S. ship by reason of the Safety Convention, shall comply in an efficient manner with the provisions of this subpart in addition to all other applicable requirements of this part. The radio station consists of a radiotelegraph station and a ship radar station. The radiotelegraph station comprises a main and a reserve radiotelegraph installation, electrically separate and electrically independent of each other (except as otherwise provided in paragraph (b) of § 83.443, a radiotelephone installation[1] and such other equipment as may be necessary for the proper use and operation of these installations. The ship radar station comprises a radar installation and such other equipment and facilities as may be necessary for its proper use and operation.

[§ *83.442 amended eff. 4-27-81; IV(77)—8*]

§ 83.443 Radio installations.

(a) The main installation includes a main transmitter, a main receiver, a main power supply, a main antenna system and a radiotelephone distress frequency watch receiver.

(b) The reserve radiotelegraph installation includes a reserve transmitter, a reserve receiver, a reserve power supply, emergency electric lights, and reserve antenna system: *Provided, however,* That:

(1) *Cargo ships engaged on international voyages.* In installations on cargo ships of 300 gross tons and upwards but less than 1,600 gross tons, and in installations on cargo ships of 1,600 gross tons and upwards installed prior to November 19, 1952, if the main transmitter complies with all the requirements for the reserve transmitter, the latter may be omitted.

(2) *Cargo ships not engaged on international voyages.* In installations on cargo ships of 500 gross tons and upward but less than 1,000 gross tons, and in installations on cargo ships of 1,600 gross tons, and in installations on cargo ships of 1,600 gross tons and upward installed piror to August 13, 1955, if the main

[1]Effective January 1, 1980, radiotelephone installations are required.

transmitter complies with all the requirements for the reserve transmitter, the latter may be omitted.

(3) A cargo ship the keel of which was laid prior to June 1, 1954, may either be equipped with a reserve antenna or provided with a spare antenna consisting of a single-wire transmitting antenna (including suitable insulators) completely assembled for immediate installation.

(c) The radiotelephone installation includes a radio-telephone transmitter, a radiotelephone receiver and an appropriate antenna system.

[§ *83.443(a) amended eff. 8—15—80; IV (77)—8*]

§ 83.444 Requirements of main installation.

All main radiotelegraph installations shall comply with the following conditions, in addition to all other requirements:

(a) The main antenna shall be as efficient as is practicable and shall be installed and protected so as to insure proper operation of the station. If the main antenna is suspended between masts or other supports liable to whipping, an approved device (safety link) which, under heavy stress, will operate to greatly reduce such stress without breakage of the antenna, the halyards, or any other antenna-supporting elements, shall be installed.

(b) The main transmitter shall be capable of meeting the requirements of § 83.552.

(c) The main receiver shall be capable of efficiently receiving A1 and A2 emission on all frequencies within the bands 100-200 kHz and 405-535 kHz. It shall be fitted with headphones capable of effective operaton. Where a loudspeaker is additionally provided for use in accordance with the provisions of § 83.204, such device shall also be capable of effective operation. The main receiver shall have sufficient sensitivity to effectively operate headphones or a loudspeaker when the receiver input is as low as 50 microvolts.

(d) There shall be readily available for use under normal load conditions, at all times when required including times of inspection of the ship radio station by a Commission representative, a main power supply for the main installation

sufficient to simultaneously (1) energize the main transmitter at its required antenna power, and the main receiver, (2) charge at any required rate all storage batteries forming part of the radiotelegraph station, and (3) charge at any required rate all other storage batteries which are connected to the main power supply for this purpose. under this load condition the potential of the main power supply at the radio room terminals shall not deviate from its rated potential by more than 10 percent on vessels completed on or after July 1, 1941, nor by more than 15 percent on vessels completed before that date. While at sea, storage batteries forming part of the main installation shall be brought up to the normal fully charged condition daily.

(e) For the purpose of determining the potential(s) of the main power supply at its radio room terminals, a suitable voltmeter or voltmeters of standard accuracy and reliability shall be permanently installed in the radiotelegraph operating room.

(f) The main installation shall be provided with a device permitting changeover from transmission to reception and vice versa without manual switching.

(g) The main installation shall be capable of being quickly connected with and tuned to the main antenna, and the reserve antenna if one is installed.

(h) The radiotelephone distress frequency watch receiver shall be capable of meeting the requirements of § 83.559.[5]

[§ *83.444(h) added eff. 8—15—80 IV(77)—8*]

§ 83.445 Requirements of radiotelephone installation.[6]

All radiotelephone installation is radiotelegraph equipped vessels shall comply with the following conditions in addition to all other requirements.

(a) The radiotelephone transmitter shall be capable of effective transmission of A3 or A3H emission on 2182 kHz and shall be capable of transmitting clearly perceptible signals from ship to

[5]Effective May 25, 1981, a readiotelephone distress frequency watch receiver is required.

[6]Effective May 25, 1981, the radiotelephone installation is required.

ship during daytime, under normal conditions and circumstances over a minimum normal range of 150 nautical miles when used with an antenna system in accordance with paragraph (c) of this section. The transmitter shall:

(1) Have a duty cycle which allows for effective transmission of the international radiotelephone alarm signal.

(2) Be capable of delivering not less than 25 watts carrier power for A3 emission or 60 watts peak power for A3H emission into an artificial antenna consisting of 10 ohms resistance and 200 picofarads capacitance or 50 ohms nominal impedance to demonstrate compliance with the 150 nautical mile range requirement.

(3) Be equipped with a device which will provide visual indication whenever the transmitter is supplying power to the antenna.

(4) Be equippped with a device capable of generating the international two-tone alarm pursuant to § 83.142 and type approved by the Commission for such use.

(5) The radiotelephone transmitter required by this paragraph may be contained in the same enclosure or case as the receiver required by paragraph (b) of this section. Additionally, these transmitters may be provided with the capability to transmit A3J emissions.

(b)(1) The radiotelephone receiver shall be capable of efficiently receiving A3 and A3H when connnected to the antenna system specified in paragraph (c) of this section and shall be preset and capable of accurate and convenient selection of 2182 kHz. The receiver shall additionally:

(i) Have a sufficient sensitivity to provide an audio output of 50 milliwatts to a loudspeaker when the input is as low as 50 microvolts. The 50 microvolt input signal shall be modulated 30 percent at 400 Hertz and provide at least a 6 dB signal-to-noise ratio when measured in the rated audio bandwidth.

(ii) Be equipped with one or more loudspeakers capable of being effectively used to maintain a watch on 2182 kHz at the principal operating position or in the room from which the vessel is normally steered.

(2) The radiotelephone distress frequently watch receiver required by § 83.443 may be used in lieu of the receiver specified in paragraph (b) (1) of this section. If the watch is stood at the

place from which the ship is normally steered a radiotelephone distress frequency watch receiver must be used for this purpose.

(3) The radiotelephone receiver required by this paragraph (b) may be contained in the same enclosure or case as the transmitter required by paragraph (a) of this section. Additionally, these receivers may be provided with the capability to receive A3J emissions.

(c) The antenna system shall be as nondirectional and efficient as is practicable for the transmission and reception of radio ground waves over seawater. The installation and construction of the required antenna shall be such as to ensure, insofar as is practicable, proper operation in time of emergency. If the required antenna is suspended between masts or other supports subject to whipping, an approved device (safety link) shall be installed which under heavy stress will operate to greatly reduce such stress without breakage of the antenna, the halyards, or any other supporting elements.

(d) The radiotelephone installation shall be provided with a device for permitting changeover from transmission to reception and vice versa without manual switching.

(e) An artificiai antenna shall be provided to permit weekly checks, without causing interference, of the automatic device for generating the radiotelephone alarm signal on frequencies other than the readiotelephone distress frequency.

(f) The radiotelephone installation shall be located in the radiotelegraph operating room or in the room from which the ship is normally steered.

(g) Demonstration of the equipment comprising the radiotelephone installation may be required to show compliance with applicable regulations whenever in the judgment of the Commission this is deemed necessary.

(h) Equipment used in the radiotelephone installation shall be adequately protected by means of suitable devices from excessive currents and voltages which cause damage to any component thereof.

(i) The radiotelephone installation should be maintained in an efficient condition however, malfunction of this equipment shall not be considered as making the vessel unseaworthy or as a reason for delaying the ship in ports where repair is not practicalbe.

[§ *83.445(a) (5) added, (b) revised eff. 8—15—80; IV (77)—8*]

§ 83.446 Requirements of reserve installation.

(a) All reserve radiotelegraph installations shall comply with the following conditions, in addition to all other requirements:

(1) The reserve installation shall be capable of being placed in operation within a maximum time of 1 minute after the need arises for its use.

(2) The reserve antenna shall be as efficient as is practicable and shall be adequately installed and protected so as to insure proper operation in time of an emergency.

(3) The reserve transmitter shall be capable of meeting the requirements of § 83.553.

(4) The reserve receiver shall be capable of efficiently receiving A1 and A2 emission on all frequencies within the band 405-535 kHz. It shall be fitted with headphones capable of effective operaton. Where a loudspeaker is additionally provided for use in accordance with the provisions of § 83.204, such device also shall be capable of effective operation. The reserve receiver shall have sufficient sensitivity to effectively operate headphones or a loudspeaker when the receiver input is as low as 100 microvolts.

(5) The reserve installation shall be capable of being quickly connected with and tuned to the main antenna, and the reserve antenna if one is installed.

(6) Emergency electric lights shall be provided, capable of being energized solely by the reserve power supply and connected thereto through individual fuses. The emergency electric lights shall be arranged so as to provide satisfactory illumination of the operating controls of the main and reserve radiotelegraph installations and of the radio station clock. The emergency lighting electrical circuits shall be arranged so as to avoid the application of excessive voltage to the emergency lights during the charging of any batteries forming part of the reserve installation. The provisions of this subparagraph shall not preclude the use of a power supply for energizing these lights solely as an additional provision. If a separate emergency radiotelegraph operating room is provided, the requirements of this subparagraph shall apply to it.

(7) The emergency electric lights shall be controlled by two-way switches placed near the main entrance to the radiotelegraph operating room and at the radiotelegraph operating position, in all cases where the distance between these points is greater than 8 feet: *Provided,* That this requirement shall be applicable to stations when the main or reserve radiotelegraph transmitter is replaced or initially installed in such station on and after May 26, 1965.

(8) There shall be readily available for use under normal load conditions, at all times when required including times of inspection of the ship radio station by a Commission representative, a reserve power supply for the reserve installation which shall be independent of the propelling power of the ship and of any other electrical system and shall be sufficient to simultaneously energize the reserve transmitter at its required antenna power and the reserve receiver for at least 6 hours continuously under normal working conditions, and of energizing the automatic readiotelegraph alarm signal keyer continuously for a period of 1 hour.

(9) The reserve power supply shall be used to energize the reserve installation and the radiotelegraph alarm signal keyer, and provided that the supply has adequate capacity, may be used to energize the following apparatus:

(i) the audible warning apparatus included as a component of an approved radiotelegraph auto alarm;

(ii) the VHF installation required by Subpart BB of this chapter simultaneously with the reserve transmitter in the case of distress urgency and safety communications;

(iv) the device for generating the radiotelephone alarm signal;

(v) the bridge-to-bridge VHF radiotelephone installation required by Subpart X of this chapter.

(10) The reserve power supply shall be located as near to the reserve transmitter and reserve receiver as is practicable: *Provided,* That the location of such power supply complies with all applicable rules and regulatons of the United States Coast Guard. The switchboard of the reserve power supply shall, whereever possible, be situated in the radiotelegraph operating room; if it is not, it shall be capable of being illuminated.

(11) All reserve power supply circuits shall be appropriately protected from overloads or short circuits which could damage any component thereof.

(12) Means shall be provided for adequately charging any storage batteries forming part of the reserve installation, and such batteries shall be brought to their normal fully charged condition daily while at sea. There shall be provided a device which, during charging of the batteries, will give a continuous indication of the rate and polarity of the charging current.

(13) The cooling system of each internal combustion engine used as a part of the reserve power supply shall be adequately protected or treated to prevent freezing or overheating consistent with the season and route to be traveled by the particular vessel involved.

(b)(1) The shipowner, operating company, or station licensee, if directed by the Commission or its authorized representative shall prove by demonstration prescribed in subparagraphs (2), (3), (4), and (5) of this paragraph or by such other means as may be deemed necessary, that the reserve installation satifies the 6hour operating requirement of law.

(2) When the reserve power supply, on board a vessel required by law to be equipped with a radiotelegraph station, consists of or includes a storage battery, proof of the ability of such battery to operate continuously and effectively over the 6-hour period of time is authorized to be established by a discharge test over a prescribed period of time, when supplying power at the voltage required for normal and effective operation to an electrical load as prescribed by subparagraph (4) of this paragraph.

(3) When the reserve power supply on board a vessel required by law to be equipped with a radiotelegraph station, consists of or includes an engine-driven generator, proof of the adequacy of the engine fuel supply to operate the unit continuously and effectively over the 6-hour period of time may be established by using as a basis the fuel consumption during a continuous period of 1 hour when supplying power, at the voltage required for normal and effective operation, to an electrical load as prescribed by subparagraph (4) of this paragraph.

(4) For the purpose of determining the electrical load to be supplied by the reserve power supply, the following formula shall be used:

(i) One-half of the reserve transmitter current consumption with the key closed (mark); plus

(ii) One-half of the reserve transmitter current consumption with the key open (space); plus

(iii) One-sixth of the current consumption of the automatic radiotelegraph alarm signal keyer when this device is properly energized; plus

(iv) Current consumption of the reserve receiver; plus

(v) Current consumption of emergency lights; plus

(vi) current consumption of the bridge-to-bridge transceiver when connected.

(5) At the conclusion of the tests specified in subparagraphs (2) and (3) of this paragraph, no part of the reserve power supply shall have an excessive temperature rise, nor shall the specific gravity or voltage of the storage battery be below the 90 percent discharge point as determined from information (such as voltage curves or specific gravity tables) supplied by the manufacturer for the type of battery involved.

[*83.466(a)(9) amended eff. 8-15-80; IV* (77)-8]

§ 83.447 Routing of power supply wiring.

The conductors connecting the main power supply to the main installation, and those connecting the reserve power supply to the reserve installation, and those connecting the radar power supply to the ship radar station, shall be so routed as to ensure adequate protection from mechanical injury shall be protected from overload, and shall be kept clear of electrical grounds.

[*83.447 amended eff. 4-27-81; IV* (77)-8]

§ 83.448 Use of Reserve Installation

The reserve transmitter, and the reserve power supply for the reserve transmitter, are primarily authorized to be used only for safety and test communication: *Provided,* That this equipment may be used for other communication for a period not to exceed 1 hour per day in the aggregate. The reserve receiver, and the reserve power supply for the reserve receiver if a storage battery, may be used at any time to maintain a watch for safety purposes if such use will not reduce the ability of such reserve power supply to energize the associated component or components of the reserve installation for at least 6 consecutive hours.

§ 83.449 Tests of reserve installation and automatic radiotelegraph alarm signal keyer.

(a) The condition of the reserve installation and of the automatic radiotelegraph alarm signal keyer shall be determined (with the exception noted in paragraph (b) of this section) prior to the vessel's departure from each port and on each day the vessel is outside of a harbor or port: *Provided,* That in the case where the vessel is in two or more ports within 1 day, the required tests need be made only once during such day: *Provide further,* That in the case where the vessel is in a port for less than 1 day, the required tests for that day may be made either prior to the vessel's arrival in that port or prior to the vessel's departure from that port. When the ship is in a foreign port, transmitter tests are subject to such limitations as may be imposed by the Administration having jurisdiction. The following tests shall be made and the results entered in the radiotelegraph station log:

(1) Check the reserve power supply as follows:

(i) Test battery charging circuits for correct polarity and charging rate;

(ii) In the case of lead-acid batteries, determine the specific gravity of the electrolyte of a pilot cell and such other cells as may be necessary to determine the state of charge;

(iii) In the case of other types of batteries, take voltage readings under normal battery load of a pilot cell and such other cells as may be necessary to determine the state of charge;

(iv) When an engine-driven generator is used, check the quantity of fuel in the engine fuel tank;

(2) Test the emergency lighting circuits and emergency electric lights by actual operation;

(3) Determine the proper functioning of the reserve receiver, while energized by the reserve power supply, by actual operation and comparison of received signals with similar signals received by means of the main receiver;

(4) Test the reserve transmitter, while energized by the reserve power supply, by actual operation when connected to the main antenna and to the reserve antenna, if one is installed, noting antenna currents;

(5) Test the automatic radiotelegraph alarm signal keyer for correct timing adjustment of keying mechanism, taking precaution to ensure that any radiotelegraph transmitter to

which this device is connected is not energized, in order to preclude actual transmission of alarm signals.

(b) In the case of vessels loading or discharging inflammable or unstable and dangerous cargo, or while berthed at oil terminals or in other comparable areas, it is recognized that predeparture transmitter tests may not safely be made. Accordingly, in all such cases the provisions of paragraph (a)(4) of this section, in connection with predeparture tests, are waived: *Provided,* That suitable explanation is entered in the radio station log.

§83.451 Automatic radiotelegraph alarm signal keyer.

The radiotelegraph station required to be provided on a ship of the United States by reason of the provisions of part II of title III of the Communications Act shall include one or more devices, of a type approved by the Commission in accordance with § 83.555, capable of automatically operating ht enormal keying circuits of a required radiotelegraph transmitter as specified by § 83.452 so as to transmit the international radiotelegraph alarm signal.

§ 83.452 Installation of automatic radiotelegraph alarm signal keyer.

(a) The automatic radiotelegraph alarm signal keyer required by § 83.451 shall be installed in a readily accessible place in the radiotelegraph operating room. Means shall be provided in the radiotelegraph operating room to permit instant use of this device to key, non-simultaneously, the main transmitter and the reserve transmitter, and to permit the device to be taken out of operation at any time in order to permit immediate manual transmitter operation. When, pursuant to § 83.442, one transmitter is employed as both a main and reserve transmitter, the automatic radiotelegraph alarm signal keyer shall only be required to be capable of keying this transmitter. Only one control shall be provided for each automatic radiotelegraph alarm signal keyer, this control shall be located in the radiotelegraph operating room.

(b) The required automatic radiotelegraph alarm signal keyer shall be capable of operating efficiently for a continuous period of at least 1 hour when energized solely by the reserve power supply.

§ 83.453 Radiotelegraph auto alarm.

(a) A radiotelegraph auto alarm which is installed and used on board a cargo ship of the United States pursuant to the provisions of § 83.203 comprises a complete receiving, selecting, and warning device of a type approved by the Commission in accordance with section 3(x) of the Communications Act, capable of being actuated automatically by intercepted radio frequency waves forming the international radiotelegraph alarm signal.

(b) The following radiotelegraph auto alarms are acceptable for use pursuant to § 83.205:

(1) [Reserved]

(2) A radiotelegraph auto alarm that was type approved by the Commission subsequent to January 1, 1954, pursuant to § 83.554.

§83.454 Installation of radiotelegraph auto alarm.

(a) A vessel shall be considered as fitted with a radiotelegraph auto alarm pursuant to § 83.453 when the installation on board such vessel complies with the conditions prescribed in the following paragraphs of this section.

(b) The radiotelegraph auto alarm shall be located in the radiotelegraph operating room and shall be installed and protected so as to insure proper operation. Means shall be provided in the radiotelegraph operating room for placing the entire radiotelegraph auto alarm system in or out of operation. A changeover switch shall be provided to: (1) Disconnect the main antenna from all other equipment and connect it to the radiotelegraph auto alarm receiver and place the system in effective operating condition; and, conversely, (2) de-energize the system and reconnect the main antenna to other equipment. A suitable voltmeter shall be provided for the purpose of determining that the supply voltages are within the limits required for proper operation of the system.

(c) Approved apparatus shall be provided for giving an audible warning in the radiotelegraph operating room, in the radio

officer's cabin, and on the navigating bridge. This apparatus shall operatie continuously after the radiotelegraph auto alarm has been actuated by a radiotelegraph alarm signal or be failure of the system, until manually stopped. Only one switch for stopping the audible warning apparatus from functioning is authorized, and this shall be located in the radiotelegraph operating room and shall be capable of manual operation only.

(d) Failure of the radiotelegraph auto alarm (if of a type approved prior to uly 23, 1951) to function normally because of prolonged atmospherics (static) or other prolonged interference, or both, shall operate a visual indicator on the bridge. The type and method of installation of such visual indicator shall comply with the requirements of the United States Coast Guard.

(e) When a radiotelegraph auto alarm is dependent for effective operation upon a power supply having a voltage within definite upper and lower limits, it shall be fitted with an auxiliary device which: (1) will energize the audible warning apparatus if and when this power supply fails or its voltage exceeds the limits specified by the Commisison for the particular type of radiotelegraph auto alarm involved; or (2) will automatically connect the radiotelegraph auto alarm to an auxiliary power supply, the voltage of which is within the specified limits.

§83.456 Radiotelegraph auto alarm instructions.

There shall be furnished at least two sets of written instructions for the guidance of the radio officer and ship's officers relative to the radiotelegraph auto alarm which shall include:

(a) A general technical description of the radiotelegraph auto alarm, including a circuit diagram of its receiver, a wiring diagram of its complete installation on shipboard, and a general explanation of its principles of operation;

(b) A list of faults which may be indicated by the sounding of the audible warning apparatus;

(c) An explanation of how to correct faults, remove and replace defective parts, and perform limited repairs at sea;

(d) An explanation of how to test the radiotelegraph auto alarm which shall be summarized upon a card and permanently attached to the front of hte radiotelegraph auto alarm in a conspicuous position;

(d) A description of procedure to be followed with respect to adjustments to be made by the radio officer when the audible warning apparatus sounds, and also in making log entries.

§83.457 Tests of radiotelegraph auto alarm.

(a) The radio officer shall, at least once every 24 hours while the ship is in the open sea outside of a harbor or port:

(1) Test the efficiency of the radiotelegraph auto alarm by using the testing device to determine whether the aparatus will respond to not less than 4 nor more than 12 consecutive dashes having an approximate duration of 4 seconds and approximate spacing between dashes of 1 second, the timing to be made by reference to the seconds hand of the radiotelegraph station clock;

(2) Determine the proper functioning of the radiotelegraph auto alarm receiver while connected to its normal antenna, by actual operation and comparison of received signals with similar signals received on 500 kHz by means of the main receiver.

(b) If the radiotelegraph auto alarm is not in proper operating condition, the radio officer shall report that fact to the master or officer on watch on the bridge.

(c) A statement that the tests specified in the section have been made, and entry of the results of such tests, shall be inserted daily in the radiotelegraph station log.

§ 83.458 Direction finding and homing equipment.

Each ship of 1,600 gross tons or over which is subject to the requirement set forth in subparagraph (a)(2) of Section 351 of the Communications Act, or which is subject to Regulation 12 of Chapter V of the Safety Convention, whose keel was laid:

(a) *Prior to May 25, 1980,* shall be equipped with efficient radio direction finding apparatus properly adjusted, in operating condition and approved by the Commission.

(b) *On or after May 25, 1980,* shall be equipped with efficient radio direction finding apparatus having a homing capability properly adjusted, in operating condition and approved by the Commission.

[§ *83.458 and heading amended eff. 8-15-80;* IV (77)-8]

§83.459 Requirements for direction finder.

(a) To be approved by the Commission the radio direction finding apparatus shall:

(1) Be capable of efficiently receiving signals, A1, A2, and B emission, with the minimum of receiver noise, on each frequency within the band 285-515 kHz assigned by the International radio Regulations for the purposes of distress and direction finding and

for maritime radio beacons, and be accurately calibrated for the purpose of taking bearings on such signals from which the true bearing and direction may be determined; and

(2) Possess a sensitivity, in the absence of interference, sufficient to permit the taking of accurate bearings on a signal having a field strength as low as 50 microvolts per meter.

(b) The calibration of the direction finder shall be verified by check bearings or by a further calibration whenever any changes are made in hte physical or electrical characteristics or the position of any antennas, and whenever any changes are made in the position of any deck structures, which might appreciably adversely affect the accuracy of the direction finder. In addition, the calibration particulars shall be verified by check bearings at yearly intervals, or as near to yearly intervals as possible. A record of the calibrations, and of the check bearings made of their accuracy, shall be kept on board the ship for a period of not less than 1 year from the date of the related action.

§ 83.460 Auxiliary receiving antenna.

An effective auxiliary receiving antenna or other approved arrangement shall be provided whenever necessary to avoid unauthorized interruption or reduced efficiency of the required watch by reason of unavailability of the normal receiving antenna for use during the period of time when a radio direction finder on board the vessel is being operated.

[§ *83.460 added eff. 427-81; IV* (77)-8]

§83.461 Installation of direction finder.

(a) The direction finder shall be so located that as little interference as possible from mechanical or other noise will be caused to the efficient determination of bearings.

(b) The direction finder antenna system shall be erected in such a manner that the efficient determination of bearings will be hindered as little as possible by the close proximity of other antennas, cranes, wire halyards, or large metal objects.

§ 83.462 Contingent acceptance with respect to direction finder calibration.

(a) Under conditions where it is impracticable for the Commission to determine the accuracy of calibration or where it

is impracticable to make the required calibration prior to departure of a vessel from a harbor or port for a voyage in the open sea, the direction finder may be tentatively approved on condition that:

(a) Prior to dpearture of the vessel from the particular harbor or port, the master certifies in writing to the Commission's inspecting engineer that, before the vessel is navigated on that voyage in the open sea beyond a radio beacon located in close proximity to that port, the direction finder will be properly calibrated by a competent technician; and

(2) During a subsequent inspection of the direction finder, the master shall make available to the Commission's inspecting engineer the appropriate written records resulting from calibration of the direction finder pursuant to said certification. If the information contained in these written records is satisfactory to the Commission's inspecting enginner, approval of the direction finder will be continued.

(b) In the absence of acceptable evidence of calibration at the time of the subsequent inspection mentioned in subparagraph (2) of paragraph (a) of this section, the Commission may withdraw approval of the direction finder until such evidence is available.

§ 83.463(a) Homing facility requirements.

(a) Direction finding equipment used on mandatorily fitted vessels whose keel was laid on or after May 25, 1980, shall additionally have a homing facility which shall:

(1) Be capable of operating on signals of classes of emission A1, A2, A2H, A3 and A3H on any frequency in the band 2167-2197 kHz;

(2) Be capable of taking direction finding bearings on the radiotelephone distress frequency 2182 kHz without ambiguity of sense within an arc of 30 on either side of the bow;

(3) Be installed with due regard to CCIR Recommendation 428-2;

(4)Posses a sensitivity, in the absence of interference, sufficient to permit the taking of accurate bearings on a signal having a field strength as low as 25 microvolts per meter;

(5) The accuracy of the homing facility shall be determined in accordance with § 83.463 by comparison of visual or calcualted

and homing facility bearings. Comparisons shall be made at — 30, 0 and +degrees relative to the ships heading to show that the correct sense is indicated.

(b) All reasonable steps shall be taken to ensure the homing facility meets the technical standards delineated in paragraph (a) above. In those cases where due to technical difficulties the standards of paragraph (a) cannot be met the Commission may grant to individual licensees an exemption from part or all of the requirements of this section.

[§ *83.463a added eff.* 8-15-80; *IV* (77) -8]

§ 83.464 Requirements of radar installation.

All radar installation provided to meet the requirements of the Safety Convention shall comply with the following conditions in addition to all other applicable requirements of Part 83 of this chapter.

(a) The main display position of the radar station shall be located in the wheelhouse and the radar shall be capable of being switched on and off and operated from that position. The installation shall be such that the radar functions normally within the guidelines set by § 83.465.

(b) In accordance with the provisions of paragraphs (c) and (d) of § 83.405, an entry shall be made without undue delay in the ship radar station log whenever; (1) the radar becomes inoperative or its output becomes in any way suspect; (2) a radar fault is cleared (the entry to include the means whereby the clearance was accomplished); and (3) routine or extraordinary maintenance is carried out.

(c) A reflection plotter shall be available and facilities for plotting provided as necessary.

[§ *83.464 added eff. 4-27-81; IV* (77)-8]

§ 83.465 Ship radar station.

All compulsorily installed ship radar stations shall, in addition to meeting all other relevant provisions of this chapter, comply with the applicable radar specifications issued by the Radio Technical Commission for Marine Services under date of July 18, 1978, as given in the Final Report of Special Committee 65 —

Ship Radar. These requirements shall take effect on April 27, 1981 and shall not be retroactive. These specifications may be obtained from the Radio Technical Commission for Marine Services, c/o Federal Communications Commission, Washington, D.C. 20554 or from the Commission's Private Radio Bureau. The applicable specifications hereby incorporated by reference in this subpart are the following:

(a) For radar equipment isntalled after May 25, 1980, the applicable document is entitled "Performance Specification for a General Purpose Navigational Radar Set for Oceangoing Ships of 1600 Tons Gross Tonnage and Upwards, *For New Radar Installations.*" This specification including its Appendix A—Design and Testing Specifications—may be found in part I of Volume II of the SC-65 Final Report.

(b) For equipment installed before May 25, 1980, the applicable document is entitled "Performance Specification for a General Purpose Navigational Radar Set For Oceangoing Ships of 1600 Tons Gross Tonnage and Upwards *For Ships Already Fitted.* This specification including its Appendix A—Design and Testing Specifications—may be found in part I of Volume II of the SC-65 Final Report.

(c) Recommendations for Tools, Test Instruments, Spares and Technical Manuals may be found in Appendixes I, II, III and IV of Part Iv of Volume III of the SC-65 Final Report.

(d) Specifications for reliability testing may be found in Part V of Volume III of the SC-65 Final Report under the title "Equipment Reliability Specification for Design and Production of Radar, Collision Avoidance, and Marine Radar Interrogator —Transponder Equipment".

[*§83.465 added eff. 4-27-81, (c) amended eff. 11-16-81; IV* (77)-8]

§ 83.466 Interior communication systems.

(a) An efficient interior communication system shall be provided between the bridge of the ship and the radiotelegraph operating room in all cases where the radiotelegraph operating room does not adjoin or open onto the navigating bridge structure. An efficient interior communication system shall also be provided between the bridge and the location of the radio

direction finding apparatus whenever the latter is not located on the bridge or within any compartment adjoining or opening onto the navigating bridge structure. When the operating position of the reserve radio installation is not located in the radiotelegraph operating room normally used for operating the main radio installation, an efficient interior communication system shall be separately provided between the bridge and each of these radio operating positions.

(b) If a vessel is provided with more than one location from which it is normally controlled and steered, the interior communication system between the radio-telegraph operating room and bridge shall include in the system a point of communication of each such location. The existence at a location of all of hte following factors will be considered to be evidence that a point of communication should there be established: (1) Provision of a steering wheel; (2) provision of a compass; (3) provision of an engine order telegraph; (4) provision of apparatus to control the whistle; and (5) enclosure of the location to form a wheelhouse.

(c) the requirement of paragraph (b) of this section shall not apply to locations established solely for emergency use in event of failure of the normal steering facilities or locations used solely while docking or maneuvering a ship while in port of occasionally for brief periods while navigating the ship in close quarters on inland waters.

§83.467 Requirements for interior communication systems.

The interior communication systems required by § 83.466 shall be capable of providing efficient two-way calling and voice communicatin, shall be independnet of any other communication system in the ship, and shall be of a type of system approved by the United States Coast Guard. Further, the location and termination of individual systems shall be subject to approval by the Commission.

§ 83.468 Radiotelegraph station clock.

A reliable clock equipped with a sweep seconds hand and having a dial not less than 5 inches in diameter, the face of which is marked to indicate the silence periods prescribed for the

radiotelegraph service by the International Radio Regulations, shall be provided. It shall be securely mounted in the radiotelegraph operating room in such a position that the entire dial can be easily and accurately observed by the radio officer from the normal radiotelegraph operating position, from the operating position at which he would ordinarily transmit the international radiotelegraph alarm signal by hand, and from the position used for testing the radiotelegraph auto alarm (if installed) for response to signals from the testing device. If a separate emergency radiotelegraph operating room is provided, the requirements of this section shall apply to it also.

§ 83.469 Survival craft nonportable radiotelegraph installation.

(a) A survival craft nonportable radiotelegraph installation required by law to be provided in a motor lifeboat shall include the following components as a minimum:

(1) An antenna for transmitting and receiving together with such antenna accessories as are necessary;

(2) An artifical antenna for testing purposes;

(3) A transmitter with keying arrangements for use of radiotelegraphy, an associated radio receiver with headphones, and a suitable device for converting from the power supply battery voltage to the voltages used by the transmitter and receiver;

(4) A power supply;

(5) The necessary material or device for a ground connection to the water when the lifboat is afloat.

(b) Components of a survival craft nonportable radiotelegraph installation specified in subparagraphs (2) and (3) of paragraph (a) of this section shall be type approved by the Commission as capable of meeting the provisions of §§ 83.556 and 83.558.

(c) The radiotelegraph equipment shall be installed in a cabin large enough to accommodate both the equipment and the person using it, and arrangements shall be such that the efficient operation of the radiotelegraph installation shall not be interfered with by the survival craft engine while it is running, whether or not a battery is on charge.

(d) The antenna shall be a single wire inverted-L type with a horizontal section of the maximum practicable length and a

height above the mean waterline of not less than 20 feet, and shall be so designed that it can be quickly erected and utilized by a person in the lifeboat while afloat.

(e) The ground system shall comply with the following requirements:

(1) The radio installation when installed in a metal hull lifeboat shall ue effectively grounded to the hull of the lifeboat. The ground connection shall be physically located in a position where it is inaccessible to the normal movement of occupants or accessories in the lifeboat;

(2) The radio installation when installed in a lifeboat having a nonmetallic hull shall be effectively grounded to a bare plate and/or strips of corrosion resistant metal having atotal area of at least 6 square feet and located on the hull of the lifeboat below the waterline.

(f) When the lifeboat is afloat the installation shall be capable of develping an antenna current such that the product of the maximum height of the antenna above the the mean surface of the water, expressed in feet, and the r.m.s. antenna current on the frequency 500 kHz, expressed in amperes, is not less than 32.

§ 83.471 Power supply for survival craft nonportable radiotelegraph installation.

(a) The power supply for the survival craft non-portable radiotelegraph installation shall consist of a storage battery capable at all times of operating the entire survival craft radiotelegraph installation for a period of at least 6 hours continuously under normal working conditions.

(b) The storage battery may be used to operate equipment other than the radiotelegraph installation (except that it shall not be used to supply power to any engine starting motor or ignition system) provided such additional use will not adversely affect the required capabilities of the battery. All individual circuits connected to the battery shall be independently and properly fused.

(c) The storage battery shall be kept adequately charged at all times while at sea. The charging of the battery shall not require its removal from the survival craft in which it is installed. The

necessary charging equipment shall be arranged so as not to interfere with the launching of the survival craft, and for this purpose shall be easily and quickly removable. The charging circuit for the storage battery shall be routed through the radiotelegraph operating room, and shall include a device located in the radiotelegraph operating room which will give continuous indication of the polarity and the rate of charge.

(d) Installations shall provide for charging of the storage battery by means of a generator on the survival craft engine.

(e) Subject to approval of the United States Coast Guard, the storage battery shall be mounted in a suitable container that will provide protection from salt water spray and also allow proper ventilation.

§ 83.472 Survival craft portable radiotelegraph equipment.

(a) Survival craft portable radiotelegraph equipment required by law to be provided shall be type approved by the Commission as capable of meeting the provisions of §§ 83.556 and 83.557.

(b) The equipment shall be stowed in the radio room, bridge or a protected location near a lifeboat and shall be readily accessible for transfer to a lifeboat. However, in tankers of 3000 gross tons and over in which lifeboats are fitted amidships and aft, this equipment shall be kept in a suitable place in the vicinity of those lifeboats which are furthest away from the ship's main transmitter.

(c) In addition, equipment for totally enclosed lifeboats shall meet the extra requirements specified in Section 83.557.

[§ *83.472(b) amended & (c) added eff. 11—16—79; IV(77)—7*, ¡§ 83.472 footnote 1 and reference to it in (c) removed eff. 4—27—81; IV(77)—8]

§ 83.473 Tests of survival craft radio equipment.

(a) Inspections and tests of survival craft radio equipment shall be conducted by a qualified representative of the survival craft station licensee at weekly intervals while the ship is at sea, and within 24 hours prior to the ship's departure from each port but not necessarily more than once each week. When the ship is in a foreign port, transmitter tests are subject to such limitations as may be imposed by the Administration having jurisidction. The

inspection and tests shall include operation of the transmitter connected to an artificial antenna, and determination of the specific gravity in the case of a lead-acid battery, or voltage under normal load in the case of other types of batteries, of any battery provided as a part of the survival craft radio equipment.

(b) When the ship is in a harbor or port of the United States an authorized representative of the Commission may require:

(1) Inspection and test of the survival craft radio equipment in the survival craft afloat, including an operational test of the transmitter and receiver connected to the required antenna to determine that the equipment is in effective operating condition:

(2) Proof by demonstration in accordance with the principles of § 83.446 (b) that a storage battery used as a part of the survival craft nonportable radio installation is capable of energizing the installation for the required 6-hour period of time.

(c) The results of the inspections and tests shall be made known to the master, and shall be entered in the ship's radio station log, or in the ship's log if the ship is not provided with a radio station.

§ 83.474 Ship station spare parts, tools and testing equipment.

(a) Each ship station shall be provided with the following spare parts:

(1) One complete set of spare parts for the radiotelegraph auto alarm installed, as specifically designated in special spare-parts lists available for inspection at any of the Commission's field engineering offices;

(2) One complete set of spare parts for type approved main and reserve transmitters installed, as specifically designated in special spare-parets lists available for inspection at any of the Commission's field engineering offices: *Provided,* That pending Commission approval of the type of transmitter installed and promulgation of a special spare-parts list for such transmitter, one complete set of spare parts as designated in § 83.477 shall be provided;

(3) A minimum of 300 feet of antenna wire of good electrical conductivity and at least 2 strain insulators for the erection of single-wire transmitting antenna;

(4) When a reserve antenna is not installed under the elective provisions of § 83.443(b), a spare transmitting antenna

completely assembled for immediate erection shall be carried. If the installed main transmitting antenna is suspended between supports, this spare antenna shall be a single-wire transmitting antenna (including suitable insulators) of the same linear dimensions as the main transmitting antenna. If the main transmitting antenna is of the self-supported vertical type, this spare antenna when erected shall be as efficient as practicable;

(5) One sleeve bearing of each type used by all rotating machines which are a component part of the required radio installation;

(6) One spare electric light bulb for each required emergency light;

(7) One gallon or more of distilled, or otherwise suitable, water for use in the required storage batteries;

(8) One pair headphones complete with a connecting cord and, if used, a cord-terminal plug;

(9) One complete set of electron tubes for the main receiver;

(10) One complete set of electron tubes for the reserve receiver;

(11) One complete set of electron tubes for the radio receiver incorporated in the required radio direction finding apparatus.

(b) Each ship station shall be provided with the following tools and testing equipment:

(1) An instrument or instruments capable of measuring 2 and 6 volts a.c. and d.c. and the ship's main power voltage supplied to the radioroom. Such instrument or instruments shall have at least 3 voltage ranges with full-scale readings of 2.5 to 5, 10 to 15, and 150 to 300 volts, shall be capable of measuring d.c. voltages with an accuracy of at least 3 percent of full-scale reading and a.c. voltages with an accuracy of at least 5 percent of full-scale reading at a sensitivity of at least 1,000 ohms per volt, and shall be capable of resistance measurements in suitable ranges to a maximum of at least 5 megohms;

(2) One 100-watt or larger electric soldering iron capable of operating from a source of power available in the room or rooms housing the required radio apparatus; and at least one-half pound of rosin-core solder or equivalent;

(3) One complete electric flashlight, two-cell or larger, or 1 portable electric inspection lamp (protected from mechanical

injury) with at least 10 feet of flexible cord, and means for rapid connection to the reserve power supply. One spare bulb of the type used shall be provided;

(4) One hydrometer for use with lead-acid batteries when this type of battery is installed;

(5) One pair 5- to 8-inch side-cutting pliers;

(6) One set of assorted end wrenches or socket wrenches, or in lieu thereof one adjustable end wrench;

(7) One 4- to 6-inch screwdriver;

(8) One 1- to 2-inch screwdriver with a blade of approximately 1/8 inch.

§ 83.476 Instruction books and circuit diagrams.

In addition to the radiotelegraph auto alarm instructions specified by § 83.456, instruction books and circuit diagrams, including modifications, shall be provided for the types of required transmitters, receivers, and radio direction finding equipment installed.

§ 83.477 Transmitter spare parts pending type approval.

(a) In lieu of the requirements of § 83.474(a) (2), the following spare parts shall be furnished for a main or a reserve radiotelegraph transmitter pending Commission type approval of such transmitter and the issuance of an associated spare-parts list:

(1) One radiofrequency oscillator tube;

(2) One tube for each radiofrequency amplifier stage;

(3) One audiofrequency oscillator tube, if used to provide A2 emission;

(4) Two tubes for a reserve transmitter which is of the self-rectified simple oscillator type;

(5) One power supply rectifier tube for each such tube used;

(6) One resistor of each type used as a grid leak;

(7) One resistor of each type used in the voltage divider of a grid-blocking keying circuit;

(8) One resistor of each type used in series with the keying relay winding;

(9) One complete set of brushes for each rotating machine which utilizes brushes;

(10) Renewable fuse cartridges of each type used in connection with units of the radio installation in the amount of at least one half the number of each size and type in actual use. For each renewable fuse cartridge in actual use, there shall be available 6 spare fuse links of appropriate capacity. For each non-renewable fuse in use, there shall be available 6 spare fuses of the same type and of appropriate capacity.

(b) The value of each spare resistor specified in paragraph (a) of this section shall be clearly indicated on that resistor.

§ 83.478 Survival craft station spare parts.

(a) Each survival craft station shall be provided with:

(1) One electron tube of each type required for operation of the radio installation. If more than 2 electron tubes of one type are used, at least 2 spare electron tubes of that type shall be provided;

(2) One neon or any other type of tube or lamp used as resonance indicator;

(3) Renewable fuse cartridges of each type used in connection with the units of the survival craft radio installation, or which are used in circuits connected to the survival craft radio installation power supply, in the amount of at least one-half the number of each size and type in actual use. For each renewable fuse cartridge in actual use, there shall be available 6 spare fuses of the same type and appropriate capacity. If fuse wire is used, sufficient wire shall be provided to permit 6 complete fuse replacements.

(b) Each survival craft station fitted with non-portable radiotelegraph equipment shall be additionally provided with:

(1) At least 35 feet of insulated antenna wire;

(2) Two transmitting antenna insulators;

(3) One pair side-cutting pliers;

(4) One screwdriver;

(5) One panel electric light bulb, if used.

§ 83.479 Location of spare parts, tools, testing equipment, and instruction books.

(a) Spare parts for the radio direction finder receiver shall be kept in the same room in which this receiver is located or with the other spare parts as specified in paragraph (f) of this section.

(b) Spare parts and tools for the survival craft nonportable radiotelegraph installation shall be kept in the survival craft cabin housing this installation;

(c) Spare parts for the survival craft portable radiotelegraph equipment shall be so kept as to be immediately available for maintenance of this equipment;

(d) Spare bulb(s) for the emergency lights shall be mounted in close proximity to the corresponding emergency light socket(s);

(e) Spare antenna wire, antenna insulators, and distilled water shall be so kept as to be immediately available to the radio officer;

(f) ALl other spare parts, tools, testing equipment, and instruction books shall be securely kept in a single space in the radiotelegraph operating room or, if desired, in any associated room adjacent to and opening directly into the radiotelegraph operating room, and shall be readily accessible to the radio officer;

(g) The space allocated in accordance with paragraph (f) of this section shall be used only for this purpose, and such space shall be appropriately and conspicuously marked;

(h) All required spare parts, tools, testing equipment, and instruction books shall be available for inspection at any reasonable time by authorized representatives of the Commission.

§ 83.480 General and individual ship exemptions.

(a) All U.S. passenger vessels of less than 100 gross tons, not subject to the radio provisions of the Safety Convention, are exempt from the radiotelegraph provisions of Title III, Part II of the Communications Act, provided that the vessels are navigated not more than 100 nautical miles from the nearest land and are equipped with a radio-telephone installation fully complying with the provisions of Title III, Part III of the Communications Act and the Commission's rules and regulations made pursuant thereto, including the requirements with respect to certificates, operators and listening watches.

(b) All newly constructed U.S. cargo vessels of 1600 gross tons and upwards, are exempt from the radiotelegraph and radio direction-finding provisions of Title III, Part II of the

Communications Act when navigated on sea trials, not more than 150 nautical miles from the nearest land; Provided, That:

(1) the vessel is equipped with a radiotelephone capable of operation on 2182 kHz and equipped with a radiotelephone alarm signal generator. The vessel may carry an additional portable radiotelephone, located in the wheelhouse, equipped with a radiotelephone alarm signal generator to satisfy the radiotelephone alarm signal generator requirements;

(2) the radio direction-finding apparatus is calibrated during the sea trials;

(3) a continuous watch is maintained on 2182 kHz whenever such station is not being used for authorized traffic during the sea trials; and

(4) the local FCC, Engineer in Charge is advised of the dates and routes of the sea trials.

(c) Exemption from the radiotelegraph requirements of Title III, Part II of the Communications Act of 1934, as amended, is granted to cargo ships of 1600 gross tons and upward navigated on domestic voyages along the coasts of the contiguous 48 states if the following criteria are met:

(1) The routes of the voyage are never more than 150 nautical miles from the nearest land.

(2) The ship shall have a satellite terminal providing both voice and telex.

(3) The ship shall have a single sideband radiotelephone with voice channels capable of operating on any distress and safety channel in the marine bands.

(4) The ship shall have a narrow-band direct-printing radiotelegraph with SITOR.

(5) The ship shall have the required 2182 kHz radiotelephone distress frequency watch receiver with a radiotelephone alarm signal generator.

(6) The ship shall have at least two VHF transceivers.

(7) The above equipment shall have provisions for emergency and reserve power sources.

(8) The ship shall have a 500 kHz auto alarm receiver and the capability of relaying the distress messages received to shore via one of the systems listed above.

(9) The ship shall participate in the AMVER system.

(10) The ship shall have the capability to operate and maintain all of the ships systems used for distress and safety in accordance with Sections 83.155(d) and 83.162 of the Commission's Rules respectively.

(d) These exemptions may be terminated at any time without hearing if, in the Commission's discretion, the need for such action arises.

APPENDIX E

Excerpts from the rulemaking record, Federal Communications Commission, PR Docket No. 79-336

Before the
Federal Communications Commission
Washington, D.C. 20554

PR
FCC 79-857
15250

In the Matter of Amendment of Part 83 to grant a general exemption from the radiotelegraph requirements of Title III, Part II of the Communications Act to United States cargo vessels of 1600 gross tons and upward navigated solely on domestic voyages along the east, west or Gulf coasts of the contiguous 48 states.	PR DOCKET NO. 79- 336

NOTICE OF PROPOSED RULE MAKING AND NOTICE OF INQUIRY

Adopted: December 19, 1979; Released: January 3, 1980

By the Commission:

1. In this Notice, we propose to exempt those United States cargo vessels engaged solely on domestic voyages along the coast of the contiguous 48 states and weighing 1600 gross tons or more from the radiotelegraph requirements set forth in the Communications Act of 1934. We request comments from the public as to whether radiotelephony alone adequately protects these vessels, and whether these vessels will retain their ability to act as lifeboats for other vessels of the same class if this proposal is adopted. We also seek comments as to whether a maximum distance from land should be established for those vessels who qualify for this general exemption.

BACKGROUND

2. Title III, Part II of the Communications Act of 1934, as amended, provides that unless an exemption is granted, all cargo vessels weighing 1600 gross tons or more must be equipped with a radiotelegraph station operated by one or more radio officers or operators. These requirements reflect the concern of Congress for the safety and welfare of vessels conducting coastwise voyages, S. REP. NO. 196, 75th Cong., 1st Sess. 3 (1937), and conform the radio communication standards for vessels weighing 1600 gross tons and upward and conducting coastwise voyages with those laid down by the Safety of Life at Sea Convention for identical vessels on international voyages.

3. It should be noted that cargo ships of 300 gross tons or more but less than 1600 gross tons are given the option of carrying either a radiotelegraph station or a radiotelephone station, so long as the chosen method of communication complies with the requirements of Title III, Part II of the Communications Act.

4. Congress allowed the Federal Communications Commission the discretion to grant exemptions to the radiotelegraph requirements. Section 352(b) of the Communications Act of 1934, as amended, provides in pertinent part that:

> b) Except for nuclear ships, the Commission may, if it considers that the route or the conditions of the voyage or other circumstances are such as to render a radio station unreasonable or unnecessary for the purpose of this part, exempt from the provisions of this part any ship or class of ships which falls within any of the following descriptions:
>
> ***
>
> 2) Cargo s' 'ps which in the course of their voyage do not go more than one hundred and fifty nautical miles from the nearest land;
>
> ***

5. The Commission has already granted exemptions from the radiotelegraph requirements of Title III, Part II to some vessels weighing 1600 or more gross tons. Exempt are those vessels whose special configuration allows them to navigate on the New

York Barge Canal[1] and those vessels which navigate on the Great Lakes 90% of the time, but make occasional coastwise voyages when the Great Lakes are closed to navigation.[2]

6. The Commission has also received requests for exemption from the radiotelegraph provisions of the Act from cargo vessels who engage in coastwise voyages, but do not navigate in excess of 150 miles from land. The Commission has traditionally held that radiotelegraph systems are essential for the vessel to vessel communications necessary for each vessel to act as a potential lifeboat for others in its same class. This holding stems from the belief that the effectiveness of this mutual pool of assistance is in direct ratio to the number of vessels on international as well as domestic voyages participating in the pool. Until very recently, the Commission has, on these grounds, denied requests for exemption.[3] Three recent requests for exemption remain pending until resolution of this docket.

7. In recent years there have been substantial improvements in marine radio telephone systems.

1) All double sideband full carrier transmitters (A3 emission) have been replaced by single sideband transmitters (A3J emission) in the bands 1605 — 2850 kHz and 400 — 23000 kHz. This conversion improved the quality and range of radiotelephone communications.
2) At present all U.S. vessels licensed to operate in the band 1605 - 2850 kHz shall be able to transmit and receive A3J emission on the carrier frequency 2182 kHz. These vessels are authorized to receive on both A3 and A3H and to transmit on either A3 or A3H for communications with foreign vessels and portable survival craft equipment.
3) By regulations which become effective on January 1, 1980, all United States cargo vessels of 1600 gross tons or more will be equipped with radiotelephone capable of operating on 2182 kHz.

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[1]On those ships, the wheelhouse may be hydraulically lowered to clear low bridges.

[2]VHF radiotelephone is used as the safety system on the Great Lakes; MF radiotelephone systems were replaced by VHF as provided for in the recent Great Lakes Agreement.

[3]See, for example, *Request for Reconsideration of Previous Denial of Exemption from the Radiotelegraph Provisions, Memorandum Opinion and Order*, aff'd sub nom. *Spentonbush Fuel Transport Service, Inc. v. FCC*, 315 F.2d 198 (2nd Cir. 1963).

4) All radiotelephone vessels (between 300 and up to 1600 gross tons) are required to be equipped with a VHF installation for short range communications.[4]
5) All radiotelegraph vessels (1600 gross tons or more) are required to be equipped with a VHF installation for compliance with existing regulations (such as those regarding bridge-to-bridge and vessel traffic systems).[5]

8. The United States Coast Guard has complete VHF coverage of the coastline of the contiguous 48 states up to a minumum distance of 20 nautical miles. The radiotelegraph vessels, soon to be equipped with a radiotelephone installation in the band 1605 2850 kHz will be able to participate in both the VHF (the international distress, safety and calling frequency is 156.8 kHz) safety systems. The new regulations will require these telegraph vessels to maintain a watch on 2182 kHz while navigated. This requirement will now establish the communications link between radiotelegraph and radiotelephone vessels.

INQUIRY AND PROPOSAL

9. We now consider whether this required duplication of communications systems is necessary to protect lives and property, or whether the merits of radiotelegraph systems are such that they should be maintained. In order to assist us in making a decision, we request specific comments on the following in addition to general relevant comments:

1) Whether the Commission has the authority to grant a general exemption for cargo vessels weighing 1600 gross tons or more, or whether Congress alone has such authority.
2) What mileage restrictions from shore should be imposed if a general exemption is granted.
3) The operational effectiveness of radiotelephony on 2182 kHz as compared with radiotelegraphy on 500 kHz in the geographical area of consideration.

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[4]When within VHF range, all communications must be initiated on VHF. If no reply is received, the 1605 to 2850 frequency band may be used.

[5]*Amendment of Part 83 to Implement an Inter-Governmental Maritime Consultative Organization's Resolution, Report and Order*, Docket No. 21089, 44 Fed. Reg. 18501 (1979).

4) Whether a language barrier exists, and if so, whether it would inhibit the effective use of radiotelephony.

We are proposing a general exemption for vessels engaged solely on coast-wise voyages between ports on the east, west or gulf coasts of the continguous 48 states for consideration in conjunction with the above listed specific questions.

10. In view of the above, this Notice of Inquiry and Notice of Proposed Rule Making, including the attached Appendix, IS ADOPTED. This proposed amendment of the Commission's rules, as set forth in the attached Appendix is issued pursuant to the authority contained in Sections 4(i) and 303(r) of the Communications Act of 1934, as amended.

11. Pursuant to the applicable procedures set forth in Section 1.415 the Commission's rules, interested persons may file comments on or before March 7, 1980, and reply comments on or before March 27, 1980. All relevant and timely comments will be considered by the Commission before final action is taken in this proceeding. In reaching its decision, the Commission may take into consideration information and ideas not contained in the comments, provided that such information or a writing indicating the nature and source of such information is placed in the public file, and provided that the fact of the Commission's reliance on such infomration is noted in the Report and Order.

12. In accordance with the provisions of Section 1.419 of the Commission's rules, an original and 5 copies of all statements, briefs, or comments shall be furnished the Commission. All comments received in response to this Notice of Proposed Rule Making will be available for public inspection in the Docket Reference Room in the Commission's Office in Washington, D.C.

13. Regarding questions on the matters covered in this document contact Nicholas G. Bagnato, (202) 632-7175.

FEDERAL COMMUNICATIONS COMMISSION

William J. Tricarico
Secretary

Attachment: Appendix

March 6, 1980

BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

Amendment of Part 83 to grant a general exception from the radio-telegraph requirements of Title III, Part II of the Communications Act to United States cargo vessels of 1600 gross tons and upward navigated solely on domestic voyages along the east, west, or Gulf coasts of the contiguous 48 states.	PR DOCKET NO. 79-336

COMMENTS OF THE MARITIME ADMINISTRATION

To the Commission:

GENERAL

It appears that the Commission feels that, for vessels over 1600 tons in coastwise trade, carriage of 2182 telephony obviates the necessity for a radio telegraph station operated by one or more radio officers or operators to satisfy concern of the Congress for safety and welfare of vessels conducting coastwise voyages.

The Port and Tanker Safety Act of 1978 enables the U.S. Coast Guard to require vessels transiting U.S. ports to carry sophisticated radar, collision avoidance, transponders and/or other safety related radio and electronic equipments. This action by Congress implies significant broadening in its concept of safety radio equipment and functions.

Carriage of more equipment and increasing importance of continued operability of equipment during a voyage seems to imply that qualifications of the Radio (Electronics) Officers should be considered along with the requirements for carriage of a radiotelegraph station and for radio-telegraph watches.

The 1974 WARC recognized this trend and recommended that administrations issue a radiocommunication operator's general certificate. The qualifications for this certificate include maintenance and repair capability and decreased telegraph operations requirements. The Commission has not yet taken action to implement this WARC recommendation.

The Maritime Administration, Department of Commerce, is pleased to offer the following specific comments on the questions raised in the docket:

1. Docket 79-857 indicates that, by Regulatory Action, the Commission has required improvement in radiotelephone equipment, fitting with 2182 KHZ on vessels over 300 tons. Consequently, the Commission proposes exemption for U.S. cargo vessels over 1600 gross tons from radiotelegraph requirements of Title III, Part II of the Communications Act of 1934. Based on the precedent of prior action, it would appear that the Commission has authority to grant exemptions.
2. The Future Global Maritime Distress and Safety System is under active review and consideration in IMCO with a view toward constructive planning for international adoption and implementation. Questions concerning classification of vessels for equipment carriage according to size, cargo, specific hazard, distance offshore, and/or radio transmission range supportable are among issues being discussed along with appropriate regulatory formulas. A simple mileage restriction at this time could be premature or preemptive.
3. For more than twenty years in the IMCO forum, the United States has maintained a position that vessels over 1600 gross tons even in "coastwise only" routes should carry equipment and maintain telegraphy watches as provided in the Safety of Life at Sea Convention for vessels on international voyages. While some exceptions for U.S. vessels have been made, the U.S. posture has remained firm despite representation by other administrations that radio telephony at 2182 KHZ is equivalent or superior to 500

KHZ telegraphy for distress alerting and safety services, and in capability to enhance "lifeboat" services to other vessels. Regulatory abrogation of a long-held U.S. position internationally could result in unfortunate consequences.

4. The U.S. position internationally has been predicated in part on the thesis that formatted messages passed by telegraphy overcome a significant comprehension problem inherent with multilingual use of radio telephone in safety services. This concept has proven valid over the years in the "alert" phase of an at sea distress. During the search phase (particularly where aircraft are involved) and on scene, where hand-held radios are increasingly available and utilized, telegraphy becomes less important as a language common denominator. According, the portability and usability of voice equipment operating at 2182 KHZ (or VHF) appears to balance substantially language disadvantages of telephony relative to telegraphy.

Wherefore, the PREMISES CONSIDERED, the Maritime Administration:

1. Supports the concept of radiotelegraph watch relief for Radio (Electronic) Officers for all U.S.-flag vessels.
2. Urges the Commission to:

(a) effect coordination with the U.S. Coast Guard to review U.S. posture on Maritime Radio Safety Services now and in the future;

(b) consider and define appropriate qualifications for Radio Electronics officers to serve on U.S. vessels in foreign as well as coastwise trade, consistent with the 1974 WARC recommendation, and future perceived requirements for safety services;

(c) afford Radio (Electronics) Officers 500 KHZ watch relief for vessels over 1600 tons in coastwise trade rather than blanket exemption from radiotelegraphy carriage;

(d) upon completion of IMCO action on the Future Global Maritime Distress and Safety Systems, issue appropriate

new regulations to reflect compliance consistent with overall national interests.

Respectfully Submitted:

CARL S. MATHEWS
Program Manager
Advanced Navigation and
Communications

BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

Granting a general exemption from the radiotelegraph requirements of Title III, Part II of the Communications Act to United States cargo vessels of 1600 gross tons and upward navigated solely on domestic voyages along the east, west or Gulf coasts of the contiguous 48 states.	)	PR DOCKET 79-336

COMMENTS OF THE UNITED STATES COAST GUARD

1. INTRODUCTION

1.1 The Federal Communications Commission released a Notice of Proposed Rule Making and Notice of Inquiry on 3 January 1980 identified as PR Docket 70-336. By this Notice, it was proposed to exempt those United States cargo vessels engaged solely on demestic voyages along the coast of the contiguous 48 states and 1600 gross tons or more from the radiotelegraph requirements set forth in the Communications Act of 1934. Under such exemption the subject cargo vessels would utilize radiotelephony in lieu of the otherwise mandatory radiotelegraphy capability. Comments were invited as to whether radiotelephony alone adequately protects these vessels, and whether they retain their ability to act as lifeboats for other vessels of the same class if the proposal is adopted.

2. GENERAL

2.1 The United States Coast Guard (USCG) by statute is authorized, among other missions, to assume operational responsibilities relating to maritime distress, safety and protection of life an dproperty on the high seas and coastal areas in which radiocommunications serve a principal role. For this reason, the USCG is concerned over any alternative configurations that may be proposed Nationally that may affect

the reasonable availability of emergency assistance and radiocommunication services and the measures taken to regulate and otherwise guide the equipment, procedures and operator qualifications.

2.2 The USCG provides shore-based facilities for distress guard along the coasts by two broad types of facilities. These include Communication Stations (COMMSTAs) at strategic locations for high seas radio coverage, and a network of 2-MHz remote or locally controlled sites operated by Group Commands along the coastline of the contiguous 48 states. The COMMSTAs of interest to this Notice are near Boston, Portsmouth, Miami, New Orleans, San Juan and San Francisco. COMMSTAs guard 500 kHz and the high frequency (HF) maritime calling channels which are at the time propagationally effective. The HF guard schedules are disseminated to maritime users periodically. The other type of shore radio facility is a network of stations providing a distress guard on 2182 kHz, and designed to ensure coverage to 70 n. miles offshore.

3. COMMENTS

3.1 The fundamental question is whether an existing, proven professionally operated radiotelegraph system may be replaced by a user-operated radiotelephone system without degrading communications performance serving distress functions of cargo vessels over 1600 gross tons. The solution proposes a geographical distance offshore as a management tool to represent the degree of risk to be assumed for deficits in communications performance. The existing radiotelegraph system with its mandatory transmitters, radio operator, autoalarm and procedures scores high in its communications reliability for distress purposes. The present user-operated radiotelephone system, while serving a number of important functions, has a number of technical and procedural problems. The Coast Guard's existing radiotelephone system, we believe, cannot provide a distress service in the offshore zone designated by this Notice equivalent to the radiotelegraph system.

3.2 The deficits in radiotelephone only communications can be alleviated in time by technological and regulatory measures. A number of refinements are recognized. Although existing manual telegraph signals provide some technical advantages in ragard to signal-to-noise ratios, there is no reason that voice or radioprinter emissions could not provide an adequate communications service. In USCG studies, the historic 500-kHz system achieves its high reliability for distress and safety from two factors in addition to radio ground-wave range. These result from the singular advantages of the autoalarm guard and the dedicated watch, albeit not continuous, of a trained operator. Although a digital selective calling system is being advanced, it is not yet available to provide the ship alerting functions. The trained operator now aboard radiotelegraph ships provides an experience base and current awareness of the situation that is more important than mere knowledge of the Morse Code.

3.3 Whereas this particular rulemaking addresses distress capability, the safety-related questions are equally important. The consequences of collision or accident affecting the radiotelephone cargo vessel itself or its jeopardy to other vessels or the environment particularly require adequate communications. Regardless of a decision by an owner or operator that a cargo vessel is afforded a reasonable risk in using radiotelephone only, the size of the ship and its cargo pose threats beyond his individual risk affecting other vessels.

3.4 Although the USCG does not feel that early implementation of an exempt cargo vessel is feasible with the existing voice system, it is prepared to work with the Commission's staff towards a voice solution which may be fully adequate in the future. In the event that procedural and technical factors are satisfied, exempted vessels should be limited by a maximum distance from the coastline. This distance should be no greater than the radiotelephone range which is technically feasible using the equipment type-approved for this type of service. In addition to the selective calling system, the following additional considerations are submitted.

4. RADIO TRANSMISSION SUPPLEMENTS to 2182-kHz

4.1 Typical voyages between domestic ports do not maintain a specific distance offshore. Vessels on voyages between west coast ports, Gulf of Mexico ports, and the east coast North of Cape Hatteras generally are usually inside of 70 n. miles of the shoreline. Voyages between the east coast and western Gulf ports generally follow a rhumbline between Key West and the western Gulf such that a portion (i.e. near 25 N 87 W) is approximately 250 n. miles from shore. Northbound ships such as between Florida and Cape Hatteras seek the core of the Gulf Stream to utilize its 4-knot advantage. The variations of the stream shift as far east as 31.5 N 76.2 W which is 196 n. miles from the Carolina coast. In the higher atmospheric noise of the Southern United States, the range of 2182 kHz is adversely affected. The result is that continous communications for all paths and conditions on 2182 kHz is marginal. This is further emphasized by the very inefficient antennas aboard vessels.

4.2 The use of frequencies higher than 2182 kHz, such as 4-MHz, permit skywave transmission paths for the coastal zones. Although the USCG has suggested implementing 4125 kHz as a supplement to 2182 kHz, the FCC has not agreed to its use in contiguous waters. The USCG is guarding 4125 kHz in Alaskan waters where it accounts for more distress calls from the fishing fleet than 2182 kHz, including transmission paths of a few hundred miles. If domestic voyages for cargo vessels are to be served by radiotelephone only, it is essential to provide a 4-MHz frequency such as 4125 kHz already in use in tropical areas.

4.3 Ship movement reporting systems such as the U.S. Automated Mutual-Assistance Vessel Rescur (AMVER) System operated by the USCG have proven of great safety benefit. Through a system of routine reports, a computer updates the track of all participating vessels which averages some 2000 daily. In an emergency, the computer provides the predicted location of all on plot vessels in a selected area of radius. Future plans for making AMVER mandatory for all U.S. vessels combined with an anticipated requirement for AMVER/USMER reports for vessels in cabotage will result in such reports from the vessels

affected by the NPRM. At present, such vessels report by radiotelegraphy and radiotelephone on the high frequency maritime bands to a USCG COMMSTA. This reporting may decrease with the exemption to permit radiotelephone on 2-MHz channels becuase only the COMMSTAs guard the HF maritime bands and have the essential personnel to relay traffic. The 2182 kHz guard is maintained only by the Group Commands as a localized coverage. They do not have adequate communications personnel to accept the traffic and to relay to the AMVER center.

4.4 Accordingly, communications coverage requires two additional capabilities. A 4-MHz distress frequency is required to supplement 2182 kHz. Further, vessels that may be exempt under these provisions should participate in AMVER or USMER in order to provide a vessel following service for safety reasons. This requires a capacity to communicate by single sideband voice in the 4, 6, 8 or 12 MHz maritime bands. Regular operation should be planned with either public coast stations or the USCG on maritime bands. The USCG cannot accept a material increase in AMVER traffic, weather observations or hydrological reports on 2-MHz channels at Group Commands. Our COMMSTAs remain the primary facilities for this traffic in the MF and HF bands.

5. SHIP-TO-SHIP ALERTING

5.1 Ship-to-ship alerting continues as a very important element of distress alerting which has been achieved primarily by localized ground-wave transmission with 500 kHz and the autoalarm or watch receiver. Although one concept of the future distress system is to provide alerting of all ships within an area of the distress system from shore, this requires a selective calling system and a shipboard receiver guard also on the digital selective calling frequencies. These changes are not expected to be implemented prior to the 1990's. However, vessels that may be exempt from radiotelegraphy should be required to outfit with the earliest available digital selective calling systems or maintain a continuous watch on 2182 kHz or a 4-MHz supplement when this is available.

6. LANGUAGE REQUIREMENTS

6.1 The Bridge-to-Bridge Radiotelephone Act already requires use of the English language for navigational purposes. Cabotage measures such as the Jones Act restrict domestic commerce between U.S. ports to U.S. flag registry. The specification of English appears appropriate to these communications requirements. It should be noted, however, that colloquial and dialectal forms of English exist which may require additional examination in the future towards a standardized vocabulary for bridge-to-bridge, distress or safety messages. In one maritime accident off the Louisiana coast, the dialectal aspects of Creole English used by one of the Captains was considered as one of the possible contributing factors. Although the aeronautical service uses standardized vocabulary, this has not been applied in maritime safety to the same extent. As a minimum, an educational program and operator qualification for cargo vessel radio operators should stress use of English words that can not be confused such as contained in the IMCO publication "Standard Marine Navigational Vocabulary".

6.2 In addition to speech intelligibility, a specific format order is required for AMVER and weather observation reports in which the order of the message elements are reported. For processing acceptance, computer inputs must follow a rigid format which has already been implemented for radiotelegraphy. Because of the manhour impact on shore operators to recast voice reports, cargo vessels using voice must follow a fixed reporting sequence. However, weather and AMVER messages are more easily handled by manual or automated telegraphy than by telephony. The Coast Guard is not prepared to accept significant increases in the number of non-distress messages received by radiotelephone. USCG operators at COMMSTAs can not reformat such voice reports without major personnel or distress watch impacts.

7. OPERATOR QUALIFICATION

7.1 If cargo vessels otherwise subject to mandatory radiotelegraphy requirements are exempt when employed on coastal domestic voyages, it is essential that a qualified operator

be included who has a higher level of training than presently required for users of radiotelephone equipment generally. The increased responsibility being placed upon radiotelephone equipment and its proper use should require more than the present elements of basic knowledge and ability to transmit and receive spoken messages in English. Operators should be qualified in the use of common brevity codes such as "Q-signals", the international phonetic alphabet, and voice communication procedures particularly applicable to the maritime service.

7.2 The responsibilities for maintenance of navigational and communications equipment such as required by the Ports and Tanker Safety Act of 1978 are provided by the presently licensed radiotelegraph operator. A change to a radiotelephone only system does not reduce the need for the experience or qualifications in maritime communications and maintenance capabilities.

8. THE FUTURE GLOBAL DISTRESS AND SAFETY SYSTEM

8.1 Exempting vessels from the radiotelegraph requirements, as proposed, will affect the distress structure. Before making changes, it is incumbent upon the Coast Guard to regard the total planning regarding distress. A major facility now being planned is the Future Global Distress and Safety System. This system will provide for rapid delivery of distress messages and communication capabilities necessary to coordinate the rescue of survivors and those in distress. The United States is taking an active, leading part in the promotion and planning for the system. It is unwise to accept additional risks to maritime safety for an interim period when a system will be operational in the near future that would negate the need to take these risks. In other words, after the establishment of the Future Global Distress and Safety System, it may impose no risk to safety to waive the telegraph requirements, as proposed.

9. THE 1980 MOBILE WARC.

9.1 The 1979 World Administrative Radio Conference (WARC) brought many changes to the radio regulations, particularly

those affecting the Table of Frequency Allocations. A follow-on Mobile WARC, necessitated by the changes made at the 1979 WARC, is expected to convene in 1982 and will have a great effect on maritime mobile operations and safety. The entire framework of the maritime mobile distress system will be open to examination. In particular, it can be expected that the Mobile WARC will consider the establishment of additional voice frequencies that will be designated for use as distress and safety channels. It will also address the use of satellites in the distress system. As with the Global Distress and Safety System, actions taken at the WARC may eliminate some of the risks involved in the proposal to waive telegraphy requirements.

10. SUMMARY

10.1 The USCG considers that the use of voice is less efficient than record forms for information exchange.

10.2 In view of actions to be taken with regards to the Mobile WARC and the Future Global Distress and Safety System, it is premature to waive telegraph requirements as proposed in PR Docket 79-336.

10.3 In addition to the consideration stated above (10.2), the U.S. Coast Guard believes a voice system can be used for distress and safety in coastal areas under the following conditions:

(1) Designate 4125 kHz as a supplement to 2182 kHz for distress and safety purposes.

(2) Implement in these procedings Resolution A380 of IMCO which adopts standard phrases contained in the IMCO publication "Standard Marine Navigational Vocabulary", and requires the use of the English language for international navigational communications.

(3) Consistent with our remarks in par. 7, require at least one operator aboard vessels in this category who is qualified for operation of all maritime voice systems used for distress and safety communications.

Respectfully submitted,

J. G. Williams
By direction of the Commandant

SUB-COMMITTEE ON
RADIOCOMMUNICATIONS -
16th session
Agenda item 7

Appendix H-1
COM XVI/7/2
22 June 1976
Original: ENGLISH

IMCO

OPERATIONAL REQUIREMENTS FOR PORTABLE AND FIXED RADIO EQUIPMENT FOR SURVIVAL CRAFT

Note by the Government of the United States of America

1. Introduction

In connection with this agenda item, it is the purpose of this Note to cite the necessity for continuing the existing inclusion of 500 kHz capability in survival craft radio equipment.

2. Transfer of Information

Survival craft radio equipment must function within a total system enabling survivors to make their plight known, to provide the detailed information necessary to facilitate their rescue, and to enable potential rescuers to determine the survivors' position by accurate direction-finding. Thus, survival craft radio equipment must be of such nature as to optimize the transfer of information during distress situations; for this purpose the minimum requirement is a capability for communication of all necessary details, as set forth by the ITU Radio Regulation 1395 and in MERSAR Chapter 2.

To ensure the ability to communicate vital information, certain factors must be taken into consideration:

- -use of a common language which may not be native to either one or both operators
- -heavy language accents
- -mental and physical stress
- -an unstable survival craft
- -wind blowing across the microphone
- -fading and distortion
- -ionospherically propagated interference
- -appropriate S/N ratio.

On 500 kHz, by the nature of the emission and the fact that it is based upon the use of professional oeprators, the communication capability is greatly enhanced.

The 500 kHz capability provides for the more efficient transfer of essential information than would be available at A3 on a higher M/F frequency.

3. **Interference Considerations**

(a) Short-range interference results from the large numbers of undisciplined operators who generally operate on 2182 kHz. This is a problem that does not exist with relation to the disciplined professional radio officers who operate on 500 kHz. IMCO and ITU have addressed the problem of interference from excessive calling on 2182 kHz, and continue to consider measures to improve this situation, but as yet the problem is still a considerable one. Co-channel interference on 500 kHz from another ship, both within and beyond 500 km may usually be silenced due to the inherent ability to interrupt radiotelegraph by virtue of the "breakin" capability of the A2 signal and equipment, and the ability of radio officers to use the equipment to separate radiotelegraph signals and "read-through" such interference.

(b) In long-range communications skywave interference from distant stations on 2182 kHz can become very severe during nighttime hours (approximately half the day). In contrast to the situation on 500 kHz, neither tropospherically nor ionospherically propagated co-channel interference on 2182 kHz may be silenced because:

(i) the interfering ship may not know it is interfering, due to the inherent inability on AM radiotelephone to "read-through" and "break-in" to silence it;

(ii) ionspherically propagated co-channel interference on 2182 kHz becomes more likely beyond 500 km. The interfering ship may not be within the communication range of the ship attempting to silence it. This is due to the fact that the ionospheric paths may not be

reciprocal, differing transmitter powers, or that the interfering ship is in a higher atmospheric noise level area. Skywaves are affected by geographical, daylight, nighttime, seasonal, meteorological and astrophysical factors (sunspot activity, aurora noise), and there exist no practical measures that can be taken to cope with the effects, which are adverse to reception on 2182 kHz for distress purposes.

4. Fading and Distortion Considerations

There is an increase of skywaves at night on all frequencies. This produces an area of both flat and selective fading, where groundwave and skywave combine, in comparable strength and out of phase with each other. Because a change in height of the ionospheric layer represents a relatively lesser proportion of the wavelength of the radio frequency at 500 kHz than at frequencies above it, the instantaneous phase difference between groundwave and skywave will vary over a lesser range at 500 kHz than at these higher M/F frequences, its component frequencies suffer unequal phase shifts, and consequent distortion with loss of intelligibility. By contrast, A2 signals consist of only three frequencies (carrier plus 2 sideband frequencies) and suffer little or no reduction in readability as a result of variation of these frequencies, as the intelligence is carried in the "on-off" keying of the signal and not in the characteristics of the modulated tone. Thus, transmissions on 500 kHz due to its primary ground wave propagation, are relatively unaffected by the phenomenon of fading and resultant distortion.

5. Direction-Finding Considerations

Time is of the essence in sea rescues to minimize the duration of dangers to survivors posed by heavy seas and exposure to extremes of temperature. Therefore, accurate direction-finding is essential for timely rescue; it becomes even more crucial when the position of the survival craft is not known. Direction-finding on 500 kHz is less affected by ionospheric reflections (especially at night) and mutual interference from conductors with a length comparable to the radio wave length than is direction-finding on higher M/F frequencies.

The ship's superstructure masts, downleads, halyards, stays, derricks and antennae of larger than 800 gross tons reach physical dimensions which approximate resonant length at the 2 MHz band. Re-radiation from these is the source of significant errors in direction-finder bearings taken in the 2 MHz band on large ships. This problem is analyzed in detail in CCIR Recommendation 428-2 (attached). The Recommendation notes (at j.f.) that on large ships with strong re-radiation effect, "homing" may be all that is possible in the 2 MHz band.

By contrast, derricks, mast and rigging on even the largest ships are unlikely to approach resonant length at 500 kHz, and the disturbing effects to direction-finder bearings do not approach a disabling magnitude. While the chips themselves and their fixed structures may reach resonant length and re-radiate, these re-radiating elements are strictly fixed in nature, and the direction-finder bearing errors resulting from their re-radiation are stable and unlikely to change over relatively long periods. Once taken into account by calibrating of the direction-finder they do not prevent the taking of accurate bearings on 500 kHz. Direction-finding with an accuracy of +1° is almost always obtainable on signals at 500 kHz. Direction-finding on signals at higher M/F frequencies are, however, subject to large, variable and unpredictable errors on ships.

Accurate direction-finding bearings, which reveal the true bearing of the source of signals on 500 kHz are obtainable, and projections of these lines will result in an accurate fix of the position of their source; it is therefore possible for a ship not herself involved in the search-and-rescue effort to contribute to the determination of the position of signal sources on 500 kHz.

6. Space, Weight and Cost Considerations

Chapter IV, Regulations 12 and 13 of the Safety Convention permit the inclusion of a 2182 kHz capability in survival craft radio equipment, in addition to the required 500 kHz capability, although not in substitution for it. While the United States is of the view that the existing 500 kHz capability should be maintained, it can readily recognize circumstances under which a 2182 kHz capability would be desirable. We have therefore

considered the physical and other results of adding 2182 kHz as a third frequency (in addition to 500 kHz and 8364 kHz), in analyzing a newly designed solid state model of lifeboat radio equipment. It includes three frequencies: 500 kHz, 2182 kHz and 8364 kHz, employing A2, A3 and A1 emissions, respectively.

Much of the electronic circuitry is common to all three radio frequencies, notably the power supply and receiver IF amplifier and audio components. The additional components required to provide each additional frequency amount to less than 5% of the total cost, independent of the MF-HF frequencies selected. Similarly, the space and weight changes are of a lesser magnitude, i.e., less than 5% for each additional frequency. Conversely, there exists no real size, weight or cost factor that would result from inclusion of any one frequency. The United States is therefore of the view that the advantages of 500 kHz should not be abandoned, nor indeed need they be, since, among other reasons, the addition of 2182 kHz as a third frequency can occur without substantial circuit, size, weight or cost penalty, while retaining the 500 kHz and 8364 kHz capability.

7. Considerations Relating to the Distress Environment

An important consideration is the type of circumstances under which occur the greatest number of distress situations, i.e., in which men must take recourse to survival craft, and require facilities to summon assistance by radio: strong winds, heavy seas, and storm conditions are likely to prevail.

Survivors must generally rely on the larger ocean-going cargo ships which are able to "live" in such seas and proceed to the location of the survival craft to effect rescue. In accordance with Chapter IV of the Safety Convention, these larger ships are fitted with communication facilities, auto alarms and direction-finders for 500 kHz, and carry radio officers, thus increasing the probability that they will receive survival craft radio transmissions of the information most useful to facilitate rescue and enabling these ships to use direction-finding on 500 kHz to pinpoint the survival craft's position with accuracy. It should be noted that there is a functioning auto alarm system on 500 kHz,

while the 2182 kHz auto alarm system recently approved, has yet to complete development, deployment and the test of experience.

8. Necessity for an Integrated System

Alerting, radio locating and communicating constitute an integrated capability, all constituents of which must be available aboard the survival craft, in effect measure. For example, the reception of an alerting signal alone, without a distress message indicating that there is indeed a distress, may be taken to indicate a "false alarm". Thus, follow-on communication is absolutely essential if the alerting signal is to perform its function, and also to provide potential rescuers with details as to how to help, what the on-scene conditions are, etc.

9. Large Ship Facilities

Finally, it must be considered that 500 kHz is the frequency on which is based the world-wide distress system provisions for ships of 1600 gross tons and over, the larger merchang ships of the world. These include tankers and chemical carriers with cargoes that pose considerable hazards for the environment, passenger ships with their large numbers of persons aboard, and all their crews. In total, approximately 1,000,000 lives are dependent on the 500 kHz safety system. Survival craft are vital constituents of the safety system that guards these lives. Survival craft radio equipment presently required, provide them with the direct and effective 500 kHz facilities common to the facilities fitted on the larger ships that are best able to assist, and indeed, may be the only ones able to assist them.

10. Conclusion

The United States believes that it is essential that the existing 500 kHz capability requirement be retained for survival craft equipment.

DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
WASHINGTON, D.C. 20350

IN REPLY REFER TO

Ser 405E/732142
30 May 1980

Dear Mr. Tricarico,

The Department of the Navy has reviewed FCC's PR Docket No. 79-336, "Amendment of part 83 to grant a general exemption from the radio telegraph requirement of Title III, Part I of the Communications Act to United States Cargo vessels of 1600 gross tons and upward navigated solely on domestic voyages alone the East, West or Gulf Coasts of the contiguous 48 states".

The Department of the Navy is opposed to this amendment for the following reasons:

- This proposal would remove our coastal ships from participation in international treaty agreements for guarding 500KC (international distress), and inhibit lending aid to ships in distress (some 156 U.S. commercial ships, about 30% of our present merchant marine, would be involved).

- 2182KC propagation is not as effective as 500KC; it is susceptible to noise, fading of groundwaves, etc., leaving many ships out of communication with shore stations and other U.S. coastal ships.

- Coastal Trade, out to 150 miles from CONUS, is more congested and dangerous than ocean traffic. This coastal belt is also heavily used by international shipping. Since they do not guard 2182KC there will be no distress guard between the international shipping and our coastal shipping.

The Navy considers this proposed amendment dangerous and in the long run uneconomical due to the loss of life and property which may occur due to the replacement of the required guard on 500KC with 2182KC. This would place international shipping

and U.S. Coastal shipping in undue jeopardy when operating in our coastal waters.

Mr. William J. Tricarico
Secretary
Federal Communications Commission
Washington, D.C. 20554

F.C. COLLINS
Rear Admiral, U.S. Navy
Director
Logistic Plans Division

DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

5670
Series 2752

Mr. James C. McKinney
Chief, Private Radio Bureau
Federal Communications Commission
Washington, D.C. 20554

October 1, 1981

Dear Mr. McKinney:

This is in response to your letter file 7820-6 dated September 8, 1981 on the subject of FCC PR Docket No. 79-366 proposing the grant of a general class exemption to certain cargo vessels when navigated on coastwise and domestic voyages.

Our original response to Docket 79-366 developed the Coast Guard's views on substitution of a radiotelephone distress system based on 2182 kHz for the currently mandated radiotelegraph system. The following points were made.

"1. An exemption based on 2182 kHz radiotelephone is premature.
2. The Coast Guard is prepared to work with the Commissions staff toward a voice solution which may be adequate in the future.
3. The Coast Guard believes that a voice system can be used for distress and safety in coastal areas under certain conditions.
4. At least one operator should be aboard vessels in this category who is qualified for operation and maintenance of all maritime systems used for distress and safety communications."

The essential ingredients for successful communications systems are as a minimum:

a. Adequate equipment operating over well established channels using proven technicques.
b. Operators skilled in the use of the equipment and familiar with the overall communications environment.
c. Adequate maintenance of the equipment.
d. Sufficient redundancy in the equipment itself and in the necessary support for it such as power sources.

Further the system should provide adequate capabilities for ship-shore, shore-ship, and ship-ship communications.

The proposals currently under consideration are broader than originally discussed and include capabilities considerably in excess of that afforded by a system based on 2182 kHz alone. We understand they would include as a minimum:

a) A satellite earth terminal providing both noise and telex.
b) A single sideband (SSB) radiotelephone with SITOR and voice channels capable of operating on any distress and safety frequency and necessary marine working bands.
c) An IMCO required 2182 kHz watch receiver with a radiotelephone alarm generator.
d) At least two VHF-FM transceivers.
e) Provisions for emergency and reserve power sources.

Additionally the ship would participate in the ANVER system.

Additionally the ship would participate in the AMVER system.

In addition to the above equipment, an auto alarm system listening on 500 kHz would allow the exempted vessel to function as a listening post for distress calls from other ships which then could be relayed to a shore unit via one of the above systems. This could be eliminated when digital selective calling is in common use.

Provision of this equipment along with a capability to operate and maintain all the vessels systems used for distress and safety would be an adequate substitute for the mandated radiotelegraph system.

Substantial changes are likely in maritime communications within the next decade as we move toward the Future Global Maritime Distress and Safety System. Carriage requirements and procedural approaches will require review and updates to assure our system is in concert with international directions and requirements. We look forward to working with you and other interested parties toward this objective.

M.E. GILBERT

Captain, U.S. Coast Guard
Chief, Telecommunications Management Division
By direction of the Commandant

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February 9, 1982

The Honorable Mark S. Fowler, Chairman
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

Re: PR Docket No. 79-336
Proposed Ship Radiotelegraph Exemptions

Dear Chairman Fowler:

As the record reflects in this proceeding, the American Radio Association (ARA) and the Radio Officers Union (ROU) have taken great interest in the maritime safety communications issues raised in PR Docket No. 79-336. Submissions by other parties, following the notice and comment period, have proposed elimination of currently mandated radiotelegraph equipment on domestic vessels equipped with satellite communication capability. These proposals are of particular concern to ARA and ROU because infant satellite technology has not been adequately tested and is incompatible with the radiotelegraph distress communications systems employed by the majority of vessels plying shipping lanes along the U.S. coast.

In their submission of July 23, 1981, ARA and ROU discussed in detail the operational deficiencies of the present maritime satellite system. In a letter of December 7, 1981, ARA and ROU again noted the unreliability of satellite and urged the Commission to defer final action and initiate comprehensive tests and studies on the alternative satellite proposals encompassed in filings made after the notice and comment period.

While the Commission has not — to our knowledge — initiated or solicited test data, the ROU in December 1981, asked its member Radio Officers to provide reports of satellite communication system malfunctions aboard the vessels on which they serve. As of February 5, 1981, Radio Officers serving on 14 out of approximately 40 ships employing satellite equipment

have responded. Additional resports are arriving daily. A summary of the reports thus far received is contained in the enclosed affidavit by Joseph M. Penot, Executive Vice President of the ROU.

We recognize that this submission is being filed only two days prior to the Commission's presently scheduled agenda meeting for consideration of PR Docket No. 69-336. However, in view of the clear indication of the unreliability of satellite communication, as set out in the reports being received by ROU, andthe apparent lack of availability of any other empirical data for Commission consideration in this proceeding, we believe that the Commission should have the enclsoed material before it with respect to any final determination in this proceeding. As stated in Mr. Penot's affidavit, the Commission is here dealing with matters which will intimately affect the safety of life and property at sea. Under the circumstances, we believe that the deficiencies in satellite communications reliability demonstrated in the enclosure warrants Commission review if consideration is being given to the possible replacement of the required radiotelegraph safety system by satellite. At the very least, we respectfully resquest that the Commission defer final action in this proceeding until ROU's data can be fully submitted and other interested parties have an opportunity to respond.

As indicated in the attached certificate of service, all parties identified on the Commission's service list for PR Docket No. 79-336 have been provided with a copy of this letter and the enclosure. An original and five copies have been provided to the Secretary for placement in the Commission's public files.

Very truly yours,

_____

Michael H. Rosenbloom

_____

John H. Vetne
Attorneys for the
American Radio Association
and the Radio Officers Union

Enclosure
cc (with enclosure): see attached

The Honorable Mark S. Fowler, Chairman
Federal Communications Commission
February 9, 1982

cc (with enclosure):

Commissioner James H. Quello
Commissioner Abbott Washburn
Commissioner Joseph R. Fogarty
Commissioner Anne P. Jones
Commissioner Mimi Weyforth Dawson
Commissioner Henry M. Rivera
Stephen A. Sharp, General Counsel
James C. McKinney, Chief, Private Radio Bureau
Nicholas G. Bagnato
Charles D. Fisher
Peter K. Pitsch, Chief, Office of Plans and Policy

AFFADIVIT

WASHINGTON)
) SS.
DISTRICT OF COLUMBIA)

Joseph M. Penot being duly sworn, hereby deposes and states as follows:

1. I am Executive Vice President of the Radio Officers Union-Dist. 3, NMEBA ("ROU"). I have been a member of the ROU for some 30 years and have been a licensed shipboard Radio Officer throughout that period. Between 1950 and 1975 my employment was devoted almost solely to the operation and maintenance of shipboard radio communications systems on vessels in international and U.S. coastal waters. I was employed on hundreds of voyages during this period.

2. In conjunction with the American Radio Association-MMP ("ARA") and the AFL-CIO Ad Hoc Maritime Committee, ROU has taken the position in PR Docket No. 79-336 that adopting a general exemption from the 500 kHz radiotelegraph requirement for cargo vessels of 1,600 gross tons or more was beyond the Commission's authority. Even if the FCC believes that it possesses the necessary authority, we have stressed that adopting a general exemption would be ill-advised and improper in view of the present inadequacy of the proposed substitute communications systems to assure prompt assistance by or for vessels without radiotelegraph capability.

3. It is not the purpose of this affadivit to reargue matters already well presented to the Commission. We, and others, have previously discussed the shortcomings of a safety system limited to radiotelephone in view of the poor range, reliability and language difficulties inherent in existing radiotelephone communications on the high seas. Other parties, however, have contended that satellite communications offers an additional or alternative safety system to the replacement of radiotelegraph communications. In a *Supplemental Memorandum of Ex Parte Presentation,* filed July 23, 1981, ARA and ROU detailed multiple categories of deficiencies in present maritime satellite communications. Although the Commission's *Notice of Proposed Rulemaking and Notice of Inquiry,* issued January 3,

1980 in this proceeding, made no mention of the possible consideration of satellite communications, it appears that the FCC may intend to rely upon the availability of satellites as a basis for adopting a general exemption to the radiotelegraph requirement.

4. Radio Officers know from daily shipboard experience that satellite does not presently offer a reliable alternative safety communications system to radiotelegraph. We have requested in prior filings that the Commission conduct its own tests and trials of satellite communications before reaching a judgment on the reliability of the equipment and technology involved. The FCC has not apparently initiated any independent testing or study of its own. In view of this lack of empirical data, ROU has sought to establish its own record of the current unreliability of satellite as a substitute for the 500 kHz radiotelegraph system.

5. There are currently 40 vessels in international and coastwise ocean service manned by ROU member Radio Officers which have satellite communications capability. Commencing in December of 1981, ROU headquarters requested that its Radio Officers aboard these vessels provide information as to the reliability of satellite in actual highseas operation. To date, reports have been received and compiled from 17 Radio Officers on board 14 vessels. A vessel-by-vessel analysis is contained in the Attachment to this Affidavit. The study is continuing and further reports are being received daily.

6. The reports, which cover the period from 1979 to the present, reveal frequent breakdown or impairment of satellite communications systems, lasting from a few minutes to several weeks. The predominant problems are transit shipboard in origin. Other malfunctions result from on-shore deficiencies in equipment and personnel.

7. Shipboard malfunctions appear to be the combined product of the operational interdependence of various satellite communications and non-radio shipbaord equipment, as well as the relative infancy of maritime satellite technology. The shipboard antenna system is the major source of problems and has been described by one MARISAT technician as the "weakest link" in the communications package. In order to maintain an effective lock on the satellite, the antenna must respond to

changes in heading, as well as the roll and pitch of the vessel. These problems can be expected to increase in the rough weather and turbulent conditions often encountered in distress and safety emergencies.

8. Further, four vessels have thus far reported that the ship's stack, and other superstructure, may impair satellite lock at low angle elevation on certain headings. One vessel reports that superstructure shadowing is particularly prevalent in waters off the U.S. East and Gulf coasts, where the necessary satellite contact angle is 13 degrees or less. Because of this, the ship had to use radiotelegraph (Morse) to notify Delaware pilots of ETA on a voyage from New York City. Other antenna failure problems are as follows:

(a) Failure to track satellite, six day malfunction. Autosteer replaced at port.
(b) Failure to track with ship's gyro compass. Repaired on board.
(c) Antenna damage from vessel vibraton.
(d) Intermittent antenna tracking failure, 23 days, cause unspecified. Cured in one instance by securing antenna position with a rope.
(e) Ship gyro and antenna motor failure.

9. Aside from antenna and superstructure shadowing problems, other impairment or interrupted satellite communications service is thus far reported as follows:

(a) Multiple sporadic failures in voice, telex or both — cause unknown.
(b) Request call circuits busy.
(c) No response to request call.
(d) Interference or interruption from ship roll and pitch on heavy seas.
(e) Interruption by MARISAT for repair, construction or tests on earth station equipment.
(f) Sporadic inability to effect (ship-to-ship) communication through satellite shore station.
(g) Keyboard locking.
(h) Failure of sensitive radio room satellite equipment in temperatures higher than 85 degrees farenheit or lower than

65 degrees farenheit; operation of satellite communications conditioned upon the operation of ship's heating and air conditioning systems, which will assuredly malfunction in engaging shutdown distress situations.

(i) Wind, sea, ship radar and vibration interference with voice communications.

(j) Effective communication range less than that represented by MARISAT.

(k) Garbled telex messages, especially outgoing — cause unknown.

10. Replacement of defective parts also presents a serious common problem. Because of the sophistication of equipment, it is apparently believed by vessel owners to be impractical and cost prohibitive to carry duplicates of all parts on board ships. Therefore, a failure at sea requiring substitute parts will last the remainder of the voyage. Parts may not be available at the destination port and must be flown in, delaying the voyage, or (more likely) deferring repairs to a later port stop. One U.S. vessel under Navy charter, with an inoperative terminal due to antenna tracking problems, failed to receive adequate repairs from communication satellite technicians at two U.S. ports (Houston and Baton Rouge).

11. Finally, difficulties at shore stations have aggravated shipboard problems, and have affected all vessels relying on the shore station for communication or relay. This has resulted from MARISAT shutdown for construction, repair or testing, lack of shore response or busy system, and unavailable or unreliable shore personnel — all of which have been reported by responding Radio Officers.

12. Present satellite communications can be a useful tool, especially for long messages. Satellite clearly cannot, however, be relied upon for a vessel's emergency communications needs. Any one of a number of equipment malfunctions, energy loss, too much heat or cold, etc. — which may be expected to occur in distress situations — can cause the loss of satellite communications. The interdependence of many sophisticated ship parts with satellite tracking and on shore equipment and

personnel increases the likelihood that one link in the complex chain will be broken. Interruption of effective satellite communication until the link is repaired or replaced can result in substantial loss of safety system communication if time-tested radiotelegraph is unavailable.

13. The Commission need hardly be reminded that we are dealing here with potentially catastrophic property loss, environmental damage, and life and death situations on the high seas. Before any general exemption from the 500 kHz radiotelegraph requirement is placed into effect on the basis of supposed satellite reliability, we urge that actual shipboard data, such as those summarized in the Attachment, be fully taken into account.

Joseph M. Penot
Executive Vice President
Radio Officers Union-Dist. 3 NMEBA

Sworn to and subscribed before me this 9th day of February, 1982.

/s/ Shirley Roach

Notary Public

My Commission Expires: 11-14-84

ATTACHMENT

VESSEL: SS American Ace

VOYAGE OR OPERATING AREA: U.S. East Coast and North Atlantic

DATES: November 5, 1981 - December 3, 1981; December 3, 1981 - December 30, 1981; also unspecified pre-1982 voyages.

REPORTING RADIO OFFICER(S): Cossaboom and Leniham

REPORTED SATELLITE EQUIPMENT MALFUNCTIONS:

1. Outages and communication impairment for a total of 27 hours, during November 1981 voyage, reported as follows:
   (a) System inoperative; antenna out of lock with satellite possibly due to stack/superstructure shadow.
   (b) Request call circuits busy.
   (c) Sporadic failure - no response to request call.
   (d) Roll and pitch of vessel to starboard occasionally causes failure.
2. Outages and communication impairment for approcimately 93 hours, during December 1981, reported as follows:
   (a) System inoperative intermittently; shut down, not responsive.
   (b) System failure during outgoing message.
   (c) Request call circuits busy.
   (d) No response to request call.
   (e) System shut down in attempt to reach sister ship on RCA system via satellite/shore relay.
3. Other history of outages and impairment:
   (a) Superstructure shadow a particular problem in U.S. East and Gulf Coasts with low antenna angle (13 degrees or less). On one occasion required radiotelegraph (Morse) to notify Delaware River pilots of ETA on coastwise trip from New York City.
   (b) Pitch and roll of ship in heavy weather makes satellite tracking difficult; strain placed on poorly designed antenna.

VESSEL: SS William Hooper

VOYAGE OR OPERATING AREA: Gulf of Mexico and Middle East

DATES: June - December 1981

REPORTING RADIO OFFICER: Bond

REPORTED SATELLITE EQUIPMENT MALFUNCTION:

Intermittent outage or impairment reported as follows:

(a) Intermittent keyboard locking
(b) Signal loss due to antenna auto-steer malfunction (replaced at port).
(c) Erratic signal due to roll of vessel to port.
(d) Intermittent terminal failure - cause unknown.

VESSEL: USNS American Explorer

VOYAGE OR OPERATING AREA: North Atlantic

DATES: October - December 1981

REPORTING RADIO OFFICER: Ivers

REPORTED SATELLITE EQUIPMENT MALFUNCTION:

Outage for a 7 day period, and impaired communication, reported as follows:

(a) No voice, impaired telex, due to failure resulting from heat/cold sensitivity of radio room satellite equipment. Heater or air conditioning temperature must be maintained at 65-85 degrees F.
(b) Annunciator interference from wind sea, ship vibration and radar.
(c) MARISAT technician advised that ship antenna is weakest link in satellite communications system.

VESSEL: USNS Potomac

VOYAGE OR OPERATING AREA: Not indicated

DATES: December 1981

REPORTING RADIO OFFICER: Ousdahl

REPORTED SATELLITE EQUIPMENT MALFUNCTION

(a) MARISAT antenna/satellite contact interference from ship superstructure shadow on certain headings; must change course to continue communications.

VESSEL: SS American Titan

VOYAGE OR OPERATING AREA: Not indicated

DATES: December 1981

REPORTING RADIO OFFICER: Griffin

REPORTED SATELLITE EQUIPMENT MALFUNCTION:

(a) MARISAT antenna failed to track with ship's gyro compass.

VESSEL: USNS Sealift Indian Ocean

VOYAGE OR OPERATING AREA: Indian Ocean

DATES: September - December 1981

REPORTING RADIO OFFICER: Wood

REPORTED SATELLITE EQUIPMENT MALFUNCTION:

Continuous impaired service and intermittent outage reported as follows:

(a) Various problems on 50% of outgoing messages; 10% incoming garbled.

(b) Lack of response to request call. These problems were identified as originating at shore terminal or satellite since other ships in the area were experiencing similar difficulties.

VESSEL: SS Delta Mar

VOYAGE OR OPERATING AREA: Not indicated

DATES: 1980-1981

REPORTING RADIO OFFICER: Marcary

REPORTED SATELLITE EQUIPMENT MALFUNCTION:

(a) Three failures of shipboard equipment during 1980-1981.

(b) System shut down by MARISAT—3¼ hours—for INMARSAT integration.

(c) Occasional delays of a few minutes.

VESSEL: USNS Sealift Atlantic

VOYAGE OR OEPRATING AREA: North Atlantic

DATES: 1980-1981

REPORTING RADIO OFFICER: Jones

REPORTED SATELLITE EQUIPMENT MALFUNCTION:

Intermittent communication outage or impairment during 1981 reported as follows:

(a) Antenna out of lock with satellite on certain headings due to superstructure shadow.
(b) Antenna tracking problem and damage from ship vibration.
(c) Periodic problems with the gyroscope, the generator and the pitch roll motor.

VESSEL: USNS Sealift Pacific

VOYAGE OR OPERATING AREA: Pacific and Gulf

DATES: 1980-1981

REPORTING RADIO OFFICER: Hunt

REPORTED SATELLITE EQUIPMENT MALFUNCTION:

Intermittent outage or impairment of satellite communication reported as follows:

(a) Periodically inoperative printer or terminal; loss of voice operation.
(b) Intermittent antenna instability.
(c) Failure of antenna track to compensate for pitch and roll of ship, causing three-week terminal outage.

VESSEL: SS Edward Rutledge

VOYAGE OR OPERATING AREA: Atlantic and Middle East

DATES: December 1981

REPORTING RADIO OFFICER: Seay

REPORTED SATELLITE EQUIPMENT MALFUNCTION:

(a) Garbled messages; inadequate assistance by operators handling USMER traffic at NAVCOMSTA, Athens.

VESSEL: American Spitfire

VOYAGE OR OPERATING AREA: Indian Ocean

DATES: September-December 1981

REPORTING RADIO OFFICER: Longfellow

REPORTED SATELITE EQUIPMENT MALFUNCTION:

(a) Voice operation outage for aproximately 100 days reported. Corrected by a replacement part at East Coast port and repair of controller interface at sea.

VESSEL: SS LNG Capricorn

VOYAGE OR OPERATING AREA: Not indicated

DATES: 1979-1981

REPORTING RADIO OFFICER: Wimberly

REPORTED SATELLITE EQUIPMENT MALFUNCTION:

Outages totalling 28 days reported as follows:

(a) Intermittent antenna tracking failure (23 days).
(b) Telex and phone inoperative (5 days).

VESSEL: Button Gwinnett

VOYAGE OR OPERATING AREA: Not indicated

DATES: 1980-1981

REPORTING RADIO OFFICER: Hargett

REPORTED SATELLITE EQUIPMENT MALFUNCTION:

Outages totalling 13 days during a period from October 8, 1980-November 3, 1980 reported as follows:

(a) Controller interface malfunction.
(b) Inoperative terminal.
(c) Inoperative roll rate sensor.
(d) Antenna and transmitter problems.

VESSEL: Arco Prestige a/k/a/ Pennsylvania Trader

VOYAGE OR OPERATING AREA:

North Atlantic, Gulf of Mexico, other areas unspecified

DATES: June-July 1979; February-November 1980; July-September 1981

REPORTING RADIO OFFICER(S): King and other unidentified

REPORTED SATELLITE EQUIPMENT MALFUNCTION:

1. Outage of one day, and other difficulties during one month period in 1979 reported as follows:
   (a) Transmitter failure
   (b) Faulty/burned-out antenna motor
   (c) Terminal inoperative; no response to request call on phone or telex
   (d) Poor signal strength, noise, due to low antenna elevation at U.S. gulf port (Houston)
2. Various problems during 1980, including 22 day impaired service during May-June, reported as follows:
   (a) Antenna not tracking properly, intermittently; apparent problem in ship's gyro system.
   (b) Faulty Telex printer, periodic, replaced twice.
   (c) Faulty annunciator.
3. Various problems during July-September 1980 reported as follows:
   (a) Antenna not tracking properly.
   (b) Annunciator inoperative.
   (c) Telex machine inoperative.